The Builder.

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"Civics" from an Architectural Point of View.

THE address by Professor Geddes last Monday on the subject which he has defined by a new word in our language—"Civics," may mark an important step in the progress of ideas as to the formation of both the political and the material city. At all events it is an interesting event to find a man of literary and mental culture like Professor Geddes occupying himself in emphasising publicly the idea that city government, polity, and planning, should not be allowed to develop accidentally, but should represent a reasoned and thought-out system. The history of great cities, both socially and materially, is one of the most interesting of studies, for which, as Professor Geddes remarked, sources of information exist, in the statistical literature of the cities themselves, which have not been fully drawn upon. Their institutions, like English liberty, have "broadened slowly down from precedent to precedent," and if London could now be planned *de novo*, both in its municipal institutions and in its architectural planning, it would be a very different city from the one which now exists and which we are striving to make the best of, in the face of obstacles left in our way by old-fashioned institutions and old-fashioned street planning and building. Yet these anomalies, both political and material, have a great and picturesque historical interest; through them we see how the forms of the city life of the present day slowly struggled into being; and in some senses it would be impossible to give to a city planned and politised anew on a given scheme, the same interest which is inherent in the remains of old streets, with their old names derived from trade, family possession, or local circumstance, and their old and often cumbrous institutions, which remain as witnesses of a polity suited to other circumstances, and now picturesquely out of date.

While fully appreciating the importance of the political point of view, it is with the outward and visible city that we are concerned. And one is obliged to admit that a city systematically planned as a new erection, however grandiose, must fail of much of the beauty of circumstance and association which cluster around the ancient city of irregular growth. The Americans have emphasised this in New York and others of their cities by merely calling the streets by number names; thus depriving themselves of that interest of association which the French give by associating new streets with names of eminent men or of remarkable events; a system which we have fortunately to some extent adopted in London of late. A city laid out on gridiron lines and numbered is an unhappy and prosaic affair, quite unworthy of an educated generation. Any opportunity which may occur of founding and planning a modern city from the beginning—and it really seems as if we may have such happening nowadays—should be regarded as an opportunity for creating a work of art on a great scale, which may appeal to us by its architectural beauty, though it can have none of the picturesque interest belonging to an old city. You cannot make the picturesque; it grows. Hence, as Professor Baldwin Brown urged in his lecture on old Edinburgh, reported on another page, in making improvements in a new city, the most reverent care should be taken of the relics of its past history, so long as their retention does not interfere with sanitary conditions or very materially with public convenience. Sanitary considerations must predominate over historical associations—that is a mere matter of common sense; but ancient relics should not be swept away merely on the plea of public convenience, unless the inconvenience is a very serious one. There is too much an inclination, among the City Fathers of modern days, to regard every possibility of a shortened street route, for instance, as a reason for pulling down whatever stands in its way, whether new or old; whereas there are often cases in which the increased convenience of transit is hardly worth considering in comparison with the destruction that must be perpetrated to obtain it.

In planning a new city we want not a Utopia but a Eu-topia, as Professor Geddes characteristically put it, contrasting the original grammatical meaning of the word in its Greek form with the acquired meaning which More's fanciful treatise has given to its Latin form

Planners of new cities have a considerable temptation to be Utopian in the More-ish sense—to aim at an ideal perfection which will hardly work, and may defeat its own ends. At the same time, the planners of a new city have a great deal in their power. They can make, *ab initio*, those arrangements for convenient conduits for water and gas mains, electrical power, and sewerage, which we feel the want of so much now, but which it is almost impossible to realise in a city already built. The desirability of arranging things with regard to the future and not merely for present requirements, is almost a new idea; or, if it was at all acted upon a generation or two back, a lack of imagination and of scientific prophecy prevented the city improvers of that day from realising what would be the probable requirements of half a century or so later. But the Utopian is a more dangerous person to an old city than to a new one, or would be if there were any chance of his having his own way. He is the kind of man who would block up all our streets with bridges and crossings, or send us all into tunnels, to get rid of the rather imaginary danger and inconvenience of crossing a street on a level. He would ruin all our city architecture if he had a chance, but fortunately his proposals are usually so preposterous as to defeat themselves.

What should be aimed at in a modern city is fine and effective architectural alignment to begin with, as a foundation for everything else, while avoiding a tame and formal symmetry; wide roadways and foot pavements (just compare the width of pavements in the modern streets in Paris with our cramped strips of flagging); the provision of trees in streets (again compare Paris); and the securing of gardens and open spaces for ever defended from being built on. There is another source of beauty in cities mostly forgotten, but of great charm, viz., the introduction of running streams through cities, or their protection where they exist. The site of London was once intersected by several running brooks, one of them a large and important one. Only think what a charming feature we should have secured in London had these brooks been revêted with built-up retaining walls and maintained as running water, instead of being allowed to be choked and built out of existence. For these it is now too late; they are dead and buried, though the Fleet is said still to run an invisible course underground. What else we can do with old cities, and London especially, is to preserve religiously all the open spaces there are; to make our new streets of ample width (we are still far too narrow and timid in our ideas in this respect); to make every provision for planting trees in them; and to insist on a certain standard of architectural treatment of new streets. But this last is a subject in itself. One or two feeble and half-hearted municipal attempts have been made, resulting in utter failure through want of a decisive plan and a determined intent. It is to be hoped that a more energetic endeavour may yet be made to remove our new streets above mediocrity and commonplace.

LIGHT AND WATER.

THE two words combined stand for a whole crowd of associations of natural and pictorial beauty. Not only is water almost the only surface in natural landscape which brilliantly reflects light, but it owes most of its varying effects to the manner in which light strikes it and is reflected from it, according to the condition of its surface. When water is more or less roughened or rippled it is the appearance of its own surface under reflected and flashing lights which makes the painter's problem. When it is still, the problem takes another form, for the water becomes a mirror, absorbing rather than reflecting light, but on the other hand reflecting the objects on the surrounding landscape; a natural incident the charm of which seems never to tire. This charm of reflecting water is a double one; partly pictorial, arising from the reduplication of colour and hue which it shows, and the softened effect which, even in perfectly still water, gives a new texture to the reflected colours; partly that of mental association, since, knowing as we do that complete or nearly complete reflection can only occur in calm water, we unconsciously associate the incident with ideas of calm and repose:

> "The swan on still St. Mary's Lake
> Floats double, swan and shadow":

a couplet which gives a sense of repose to the whole passage, in spite of the poet's unscientific use of the word "shadow" for what is not a shadow. There is no effect more seductive to the mediocre artist than this of reflection in water; and it seems so delightfully easy too! Yet this is rather a delusion, for while the reflected light from the surface is much simpler in still than in rippled water, the problem of reflected objects is a complicated one, introducing questions of perspective effect which are often overlooked. It seems, to the superficial amateur, such an easy thing, when regarding water as a mirror, to repeat below its plane, more or less distinctly, what is visible above its plane. Yet in fact this reduplication can never occur except with objects close to the water's edge, and even then only if they present a flat vertical plane at right angles to that of the water. In the reflection of a wall with projecting coping, for instance, it will be the shadowed soffit of the projection that will be seen in the water, which, if the spectator's eye is above the top of the real wall, will be invisible to him. So the reflection of a plant overhanging at the water's edge will show the shadowed side of the leaves, not the sunlit side which the spectator sees in the real object. There is indeed the theoretical case of the eye being on the level of the water, when image and reflection would be identical; but this is too merely theoretical for consideration.

It is the fact that the eye is always more or less above the level of the watery mirror, which produces such often unexpected discrepancies between the appearance of objects in receding planes in the actual landscape and their reflection in the water. The reflection, if we could reproduce it as a solid entity, is really the precise inversion of the actual objects, but we see them at a different angle. Consequently foreground objects in the reflection intercept those in their rear in a manner in which they do not intercept them to the eye in their material positions. It is a question of perspective effect. We remember a curious and unforgettable object-lesson in this respect many years ago, when walking in a country lane in twilight, approaching an open space with a pond in the centre. On the further side of the pond passed a team of horses, totally invisible in the fading light in consequence of a dark mass of hedge beyond them. But in the reflection in the pond the whole team was clearly silhouetted against the reflected sky, the hedge being too far back to come into the line of reflection. It was a most curious and unexpected effect, quite puzzling at the moment.

Sir Montagu Pollock has published an interesting and useful book* in which he has summed up the results of much observation both on the perspective of reflections and on the effects of light on water, and in which he explains by very clear and instructive diagrams the reasons for the discrepancy between the material objects and the reflections as seen in calm water. The subject touches both on the scientific and the artistic side of art-study. Experienced artists perhaps hardly need such demonstration of facts which they must often have noticed in painting or sketching from nature; yet some painters who are masters of the representation of colour and aërial effect in landscape are not always very strong in the perception of perspective, and to beginners in landscape sketching it must be most useful to have the scientific reason for these perspective effects of reflection so clearly demonstrated to them by means of diagrams—sections, so to speak, of the landscape, the reflection, and the water-plane. Though a good many various results are illustrated in detail, the whole principle of the matter is really summed up in his Fig. 4, showing how "The difference between the reflexion† and the direct view depends upon the height of the eye above the water." In this diagram, which we reproduce, the spectator is supposed to be placed on the summit of a hill overlooking a lake with a house and trees and a hill behind them on the other side of it; but he sees nothing reflected but the top of the opposite hill. To explain this the author supposes him to be sunk to a position at an equal depth *below* the water level, vertically under his original position; and it becomes obvious at once that from that position he could only see the top of the opposite (actual) hill, the projection of low land below it hiding from him both the houses and trees and the base of the hill. What is true of the inverted standpoint and the actual image is true of the actual standpoint and the inverted image. If he took his stand on the low ground nearer the water-level he would see the reflection of a considerable portion of the house and of nearly three-fourths of the

* "Light and Water, a study of reflexion and colour in river, lake, and sea." By Sir Montagu Pollock, Bart. London: Geo. Bell and Sons. 1903.

† The author writes "reflexion," and therefore in quoting him we give his spelling, though it is not the one we have usually adopted. Philologically, either may be defended.

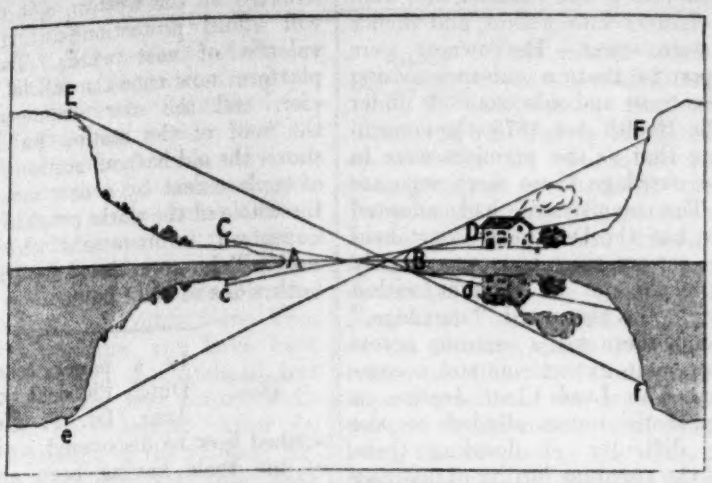


Diagram Showing Effect of Elevated Standpoint upon Reflections.

opposite hill. It seems so simple as to be self-evident, when drawn out in this way as a section; yet it represents a practical fact often overlooked. A good many other diagrams illustrate various applications of the rule under various circumstances, and these may make it plainer to some readers; but the whole theory is really summed up in this diagram, and any one who has properly grasped the fact as illustrated there can apply it in any other case.

While recognising the clearness of the author's reasoning and demonstration on this point, we confess that we cannot follow him in his note about the rainbow at the end of the chapter. To put the question "Can a rainbow be reflected?" has perhaps not occurred to everyone; but it is no doubt a curious point, when we consider that a rainbow has no objective existence, and that, as the author puts it, no two men see the same rainbow. But then we have to remember that a reflection has no existence either; and that, in a somewhat similar sense, no two men see the same reflection, since the reflection depends upon the position of the spectator. We have read his note and examined his diagram carefully, but it carries no conviction to our mind. The author seems to suggest that if the spectator on a position some distance above the water level looks down to the water for a reflection of his rainbow, he will see (if he sees any reflection) not the reflection of that rainbow but of another, which is invisible except by reflection. It is possible that in very clear water he might see an apparent rainbow at another angle formed against the reflected cloud in the water, but we are of opinion that he will also see in the water the reflection, in the ordinary sense, of the rainbow that he sees in the air, if it is sufficiently strongly brought out against a dark cloud also (of course) reflected. The cloud, it is true, is a material entity, the rainbow is not; but we only know that by reasoning; to the eye it is an entity, and reflection itself is only an optical effect. It is seldom that there is an opportunity of testing the point by observation; but imagine a case of a brilliant rainbow strongly relieved against a dark cloud, and above calm water; does the author mean to assert that the cloud will be reflected and rainbow light will not be? We should certainly be very much surprised to find that it was so. Turner, we think, has painted a segmental rainbow with a portion of it reflected at the reverse angle in water; we seem to remember such a point in one of his works; and though Turner cared little about verisimilitude in the details of a scene, he studied general facts of nature carefully. The author admits that he has never had an opportunity of seeing any such break as he imagines there must be between the real (if one may so speak) and the reflected rainbow; on the only occasion when he remembers seeing the reflection of a rainbow in water, "its extremities were hidden by near objects, so that he had no opportunity of observing the break." We should very much doubt if he ever will have one.

The chapter on the reflections in rippled water is very well done, and gives in diagrams the optical reasons for various effects of light on rippled water which are often represented in painting with more or less truth, though not always with evidence of distinct reasoning as to the causes of these effects. There are two interesting points to which the author draws attention. One is, that the reflection from the sun is more vertical in a comparatively light wind, where the ripples follow each other in pretty regular lines, and more spread out in a stronger wind, where the waves are more broken up into different angles and there are more facets to throw off side lights. Accordingly, where the pathway of the moon on the water widens out towards the horizon, this is an indication that out at some distance there is rougher water. Another point mentioned by the author in regard to painting reflections in rippled water is, that those of distant objects tend to lengthen out, or lengthen down, vertically, and are therefore best represented by vertical strokes of the brush, whilst nearer at hand these reflection marks resolve themselves into separate horizontal streaks. He does not in that sentence point out the reason of this, though it is to be inferred from remarks on other pages; but the reason undoubtedly is that in the distance we see only the top and front of the ripples, which present the same reflection, while in the foreground we see over the crests on to the other side, which reflects at a different angle. We noticed an instance of this the other day, in walking by a piece of water ruffled by a fresh breeze, in which there were various posts placed at intervals. As long as these posts were at a distance, they presented no reflection, for we could only see the top and near side of the ripples, which reflected sky light. As we approached each post, it developed a strong though broken-up reflection, because we could then see over on to the further side of the ripples, which reflected the dark colour of the posts. That seems a very suggestive object-lesson as to the effect of distance in modifying reflections in rough water.

The chapter on colour in rippled water is one that we think painters will find interesting, and many of the remarks in it we can confirm from our own observation. On the subject of sea-colour, which is especially interesting and complicated, a good many suggestions are made in explanation of the varied and sometimes quite unexpected effects of colour in rough seas. One of the practical conclusions from the study of the subject is that rough water is better represented by detached spots of colour than by any pervading colour. Owing to the varied faces presented to the light, it is possible, the author remarks, to make out three or even four distinct colours on each little wave in an ordinary ripple. This however, of course, can only refer to foreground waves; in the middle distance the points of colour would blend into one pervading tone, and could only be so represented in painting.

We recommend the book to the attention of painters; whether they agree or not with all the views expressed, they will find it interesting and suggestive; and to all lovers of nature, whether painters or not, the subject is one full of fascination.

NOTES.

The Preservation of Hampstead Heath.

THE Hampstead Heath Extension Council are appealing to the public for help to save the beauty of Hampstead Heath from being destroyed by the building which will probably follow the formation of the Tube railway terminal station on the Heath, unless measures can be taken to secure the land for the public. With this view the Hampstead Heath Extension Council (as we have before mentioned) are endeavouring to raise money to purchase from the Eton College Trustees Wylde's Farm and the meadows lying on the north-west boundary of the Heath, and adjacent to the new station. Plans have actually been made for laying out this land, about 80 acres in extent, for streets and houses, making a small town by the terminus, which would completely spoil the view from this portion of the Heath. The Heath Extension Council have the option of purchase till September 1, and unless the land can be acquired before that date it will be sold for building land. About 6,000*l.* more is still required to make up the purchase-money. It is to be hoped that this will be done, or the opportunity will be gone for ever. Subscriptions can be sent to Mrs. Barnett, Warden's Lodge, Toynbee Hall, Whitechapel; to the London and South-Western Bank, 28, High-street, Hampstead; or to Lloyd's Bank, Rosslyn Hill, Hampstead. Apart from larger subscriptions, if every one who goes on the Heath would send a

shilling to the fund, a good deal would be done.

Highways and the Heat.

THE continued dry weather is playing havoc with many highways, either because they are not properly managed or because they are too narrow for the traffic upon them. As regards the first point it is evident, as can be demonstrated to anyone who will inspect a few highways, that steam-rolling is something of a snare. For there is now, with an increased use of steam-rollers, a distinct tendency to break up the stones less, and also to put round stones down with angular stones. After a steam-roller has been over a road, however improper the material may be, it has for a time an appearance of smoothness. But when continued dry weather comes the round stones or those which are too large begin to get loose, and the entire surface gradually breaks up. When stones were carefully broken and worked in by traffic in winter the initial process was annoying at first to the wayfarer, but the result was a road which was stronger in dry weather than a road with improper material only partially bound together by a steam-roller. In the southern counties, notably in Herts and Bucks, miles of roads are now in a very bad state from the above causes.

"Owners" and Street Improvements.

IN the case of Mayor, etc., of Hackney *v.* Lea Conservancy Board (*Builder*, p. 74) the Court of Appeal had to determine the meaning of the word "owner" in section 250 of the Metropolis Management Act, 1855. This question has frequently come before the courts, and the decisions have been noted by us from time to time. The Conservators of the River Lea were called upon to bear their proportion of the expenses of making up a new street in respect of a strip of land which was used by them solely as a retaining bank on the Hackney Cut, but which was 26 ft. wide and capable of other use, and the question was whether they were "the persons for the time being receiving the rack rent of the premises or who would so receive the same if such premises were let at a rack rent" within the meaning of the Act. The Court below had held that the premises were held for purposes inconsistent with the land being rack-rented as between landlord and tenant. The statutes under which the Conservancy held the land contained no power to let, but they did contain a power of sale. The Court of Appeal held that they held the land beneficially, and that it was not *extra commercium*, and that even if they had no power actually to let the land themselves it was nevertheless capable of being let at a rack rent, and the Conservators were therefore liable as owners to contribute to the paving expenses.

Drains or Sewers.

IN the case of Harris *v.* Scurfield (*Builder*, p. 74) the old question of drain or sewer was again litigated. The appellants were the owners of eighteen houses which were built in blocks of six to seven houses and were back to back. The drainage for slop water was by separate channels cut in the pavement of the court between the houses at right angles to each house into a side channel, and from the side channel into gullies, and thence to the main sewer. The owners were called upon to abate a nuisance arising from these cross and side channels under the Public Health Act, 1875, the contention being that as the premises were in the same curtilage these were separate drains. The magistrates had adopted this view, but the Divisional Court held they were sewers, since houses separately occupied could not be brought within the meaning of the word "curtilage," even though there was a common access and to a certain extent common accommodation. The Lord Chief Justice in almost pathetic terms alluded to the recurring difficulty of deciding these cases and the apparent futility of pointing out the necessity for fresh legislation.

The Welsh Power Scheme.

IT is interesting to note that substantial progress has been made with the extensive system of electrical power distribution inaugurated in South Wales. The district assigned to the company comprises over 1,000 square miles, and uses something like 500,000 horse-power, chiefly provided at the present time by steam and gas engines. As the electricity company is already able to supply current for power purposes at ¾d. per Board of Trade unit, it is probable that users will find considerable economy to result from the adoption of electricity. The company has so far established three generating stations, one at Pontypridd with a capacity of 6,000 h.p., and others at Cwmbran of 1,320 h.p. and Bridgend of 750 h.p., while a fourth is in course of construction at Neath. One excellent result of the scheme is that the Bridgend Urban District Council, who had proposed very heavy expenditure for the erection and equipment of a generating station, decided to purchase the current required, and were able to show a profit on the first year's working of their electricity department—a result that is somewhat unusual in connexion with municipal enterprises of the kind. We should now like to hear of some electric power schemes involving the utilisation of water power for the generation of current, provided they do not involve the destruction of any picturesque waterfall.

Folkestone Harbour Extension.

ON Tuesday last week, when laying the final stone of the new pier and harbour works at Folkestone, M. Cambon appropriately observed that the ceremony had a special significance and marked the *rapprochement* realised between the peoples of England and France. The works, which were commenced in 1896, include the reconstruction of the pier with six new landing-stages, the rebuilding of two railway stations, and the erection of an overhead promenade. The old timber pier is replaced by a granite-faced concrete structure, with a width of 75 ft., which is continued 900 ft. beyond the end of the old pier—300 ft. in a straight line and 600 ft. at an angle of 36 deg. therefrom, so as to form shelter for vessels lying on the eastern side of the pier. The new landing-stages provide adequate accommodation for steamships at high or low tide, and two berths situated on the western side of the pier will afford protection during the prevalence of east winds. The railway platform now runs the full length of the pier, and the new promenade forms the roof of the station buildings. On shore, the old harbour station is in course of replacement by a new structure, and the whole of the works constitutes a most important improvement which we are sure will be appreciated by travellers on both sides of the Channel.

Magnetic Alloys.

IN a paper read to the Dutch Physical Society last June, Dr. F. Heusler described how he discovered, owing to one of his tools having been accidentally magnetised, that a particular alloy of manganese and tin was strongly magnetic. He has since made a careful research on the magnetic properties of alloys of manganese, and has made one or two further discoveries which may have several commercial applications. He has noted that given alloys become non-magnetic at definite temperatures, and that this temperature, when the manganese is alloyed with lead, is only 140 deg. Fahrenheit. This can obviously be utilised for temperature-indicating devices, and, if it is found that the alloys do not lose their magnetic properties with time, it can also be used in connexion with fire alarm devices. A manganese lead magnet, for example, would lose its magnetic properties at 140 deg. Fahrenheit; its keeper would therefore drop at this temperature, and it could easily be arranged that it should complete an electric-bell circuit, and so give the alarm. Theoretically, also, it seems to us that this discovery of Dr. Heusler's solves the problem of converting heat directly into work. By alternately heating and cooling a magnet made of one of these alloys, the keeper may be kept oscillating by the magnetic attraction continually overcoming its weight, and thus work could be obtained. A generator for electric currents could also be made on this principle. It was found that an alloy of manganese, aluminium and copper rivalled cast iron in its magnetic properties, and although the cost of this alloy makes its commercial application at present out of the question, yet it is highly probable, seeing the important results obtained in this brief research, that further discoveries in the immediate future will make these alloys useful in dynamo construction. From a theoretical point of view many interesting problems have arisen. A new magnetic theory seems to be required to explain why, for example, the addition of aluminium to a practically non-magnetic alloy should convert it into a powerful magnet.

The Volcanic Origin of Oil.

AS OBSERVED by geologists at various times, not only are gaseous, liquid, and solid hydrocarbons among the more important products of solfataric volcanic emanations, but also acid vapours, sulphuretted hydrogen, gypsum, and calcareous and siliceous waters. That such volcanic phenomena represent the normal and orderly process of petroleum production appears to be a clearly established

geological fact, for reasons which are stated by Mr. Eugene Coste in a paper recently read before the Franklin Institute. It is interesting to note that, as pointed out by the author, the oil, sulphur, salt, natural gas and hydrogen-sulphide products of the Texas Coastal Plain are not indigenous to the strata in which they are found, but are resultant products which have ascended, under volcanic pressure, at points along lines of structural weakness, and have been disseminated through thousands of feet of the shales, sands, and littoral sediments of the same region. After an exhaustive discussion of the subject, Mr. Coste arrives at the important conclusion that as oil and gas have only been supplied along lines of structural weakness, or along fractured zones of the crust of the earth, new oil and gas fields are to be looked for only along such belts or zones. Existing oil and gas fields serve to indicate the position of numerous oil belts, and the author suggests that, so far as practical results are concerned, the important point is to accurately trace the fissured areas on reliable maps, and to drill in the localities thus indicated.

Museum at Famagusta, Cyprus.

A LITTLE museum of the most modest pretensions has been recently constituted in Famagusta, Cyprus, for the purpose of housing the valuable fragments of sculpture which for more than twenty-five years have littered the Zaptieh barrack-yard, in the middle of the ruined city. It is to be hoped this is the beginning of good things, as far as Cypriote antiquities are concerned. The collection of fragments now rescued from a miserable condition has been to a great extent illustrated in the great work on "L'Art Gothique et de la Renaissance en Chypre," published by M. Enlart, at the cost of the French Government, in 1899. Would that we could record the institution of similar "provincial museums" in other parts of the island, for preserving the interesting remains of mediæval art still surviving in private possession, or abandoned to the tender mercies of Government officials.

The Star Chamber.

ADVERTING to the recent decease of Sir Reginald Palgrave, who until his retirement in 1900 had been during many years Clerk to the House of Commons, we may mention that amongst his investigations in the field of historical archæology was an inquiry into the exact position of the Star Chamber. Sir Reginald Palgrave succeeded in ascertaining, after much research, that the drawing-room of his own residence—a room which has since been given up to the leader of the House of Commons—stands almost precisely over the spot. The Star Chamber, having escaped from the fire in 1834, was destroyed for the building of the north wing of that part of the precincts of the new Houses of Parliament. On July 8 were sold at Messrs. Foster's rooms in King-street, for ten guineas, eighteen pieces of stained glass, bearing heraldical devices and portraits of Kings of England, which reputedly had been removed from the Star Chamber many years ago.

Chartley Castle Estate, Staffordshire.

THIS estate, which extends over some 8,000 acres, lying between Stafford and Uttoxeter, will shortly be offered for sale at auction. Of the ninety-eight lots the principal lot includes the Manor Farm and its early Elizabethan manorial house, Chartley Park, famed for its indigenous herd of wild white cattle—descended from the primeval herds of Needwood Forest—Chartley Hall, a seat of the Shirleys, Earls Ferrers, and the ruins of Chartley Castle. The last-named consists of two ivy-covered round towers encompassed with yew trees, being the remains of the castle built by Randolph de Blundeville, fourth Earl of Chester, in 1229, after his return from Palestine. His sister brought the county estates in marriage to William de Ferrers, Earl of Derby, ancestor of John, who was summoned to Parliament as Baron Ferrers of Chartley in 1299, and of Sir Robert Shirley, Baron Ferrers, who in 1711 was advanced Viscount Tamworth and Earl Ferrers. The Castle, having been forfeited by Robert de Ferrers, eighth and last Earl of Derby, on his attainder *temp.* John was subsequently restored to his house. A residence, constructed mostly of timber, that took its place was consumed by fire in 1781. It had been the home of the Devereux, Earls of Essex: Sir Henry Shirley married in 1615 Dorothy, daughter of Robert, the favourite of Queen Elizabeth. Chartley Hall, a moated house in the domestic Gothic style, embodies the prison-lodging of Mary Queen of Scots, whence she was taken to Fotheringay Castle, but the greater part of the mansion has been destroyed by fire on two occasions since that time.

Ironmongers' Hall, Fenchurch-street.

ADVERTING to Messrs. Hubbard and Moore's designs for rebuilding the Company's Hall, as published in our number of May 28, we may mention that the present hall was built in 1748 after plans and designs by Thomas Holden. The stone front consists of a rusticated ground floor and two floors above, the middle portion of the façade has an order, on the first and second floors, of four Ionic pilasters with an angle-pediment, in the tympanum of which are the arms of the Company between two large cornucopiæ. In the middle of the order, and above the central doorway, is a Venetian window, having four Ionic columns, half-engaged, and over that is an oval-shaped opening, glazed for light; the spaces on the same line between the two pilasters on either side are pierced with similar circular openings. The first-floor windows of the two sides have rounded heads, those of the ground floor are squared. An urn surmounts the pediment, and there are urns upon the open balustrade. From the vestibule, which is divided with Tuscan columns, a large staircase leads to the banqueting hall, measuring 70 ft. by 30 ft. and 30 ft. high, which about sixty years ago Jackson and Son decorated, after the Louis XIV. style, with papier-mâché and carton-pierre imitative oak. The Company, who possess a portrait by Gainsborough of Admiral Viscount Hood, presented by him in 1783, was first incorporated in 1464; their first hall, on the present site, had a gate-house, refectory, and armoury; in 1565 the Company of Court Letter Scriveners were incorporated with the Ironmongers, who constituted a guild or craft in the early years of the XIVth century.

Barnet Isolation Hospital Competition.

THE Barnet Hospital Committee at their meeting last week again discussed the question of appointing an assessor in the case of the Isolation Hospital competition and finally decided against it, the absurd argument that it would be unjust to the competitors to appoint an assessor now, when they did not advertise it, being again brought up. This looks rather like a convenient argument brought up to give a show of justice to a proceeding which is only influenced by economical considerations; an assessor will have to be paid, and they do not want to pay him. It is noticeable that one of the arguments was that they had on their Board Mr. Hasluck, who was a professional gentleman; and that Mr. Hasluck himself subsequently said that he knew nothing whatever about isolation hosiptals, "that it was a question of life and death in deciding the character of the new building, and that if any defects should afterwards be discovered the responsibility resting on the Committee would be a very serious one." Mr. Hasluck is evidently a sensible man, and it is a pity that his advice was not listened to.

Eton War Memorial Competition.

THE Eton War Memorial Competition, about which we published a letter last week from "Etonian," seems to have been conducted in rather an odd manner, from an architect's point of view. The circular sent round to the competitors, announcing the award of the premiums by the assessor, states that the plans have obtained warm approval from the assessor, and that "whatever course be finally adopted, they will be of the greatest service to the committee." Further on it is stated that "the Committee of Taste are not yet in a position to make any further statement in the matter, or to suggest the adoption of any one design, *or the combination of any two or more designs*" (the italics are our own). The "Committee of Taste" must be in need of a little sound architectural advice if they really suppose that a "combination of two or more designs" is a proceeding either reasonable in itself or likely to be accepted by the architects. If the professional assessor (Mr. Norman Shaw) saw this circular, we cannot understand his letting it go out without a protest. We presume the Committee of Taste is entirely an amateur one; certainly its ideas about architectural design seem to be of a very amateurish description.

PORTLAND-PLACE, WEST KENSINGTON.—Steps are being taken for the affixing of a tablet upon the front wall of No. 7, Portland-place, to commemorate the circumstance that Coleridge occupied the house in 1810. Portland-place forms a row of houses on the west side of a turning which leads, southwards, out of the high road to Hammersmith, into Avonmore-road, and overlooks the railway line at the former Caunter's Bridge, near Addison-road station. A local tradition avers that Coleridge, either before or after his sojourn in Portland-place, lodged for a while in the adjacent Edwardes-square.

RECENT DISCOVERIES IN THE ROMAN FORUM.

THE discovery of a group of prehistoric vases in a specially-constructed receptacle in the base of the equestrian statue of Domitian has recently been brought to the notice of the readers of the *Builder* (May 28; p. 574). The character and meaning of the deposit has not yet been certainly determined; but it is worthy of notice that the vases form a group of several varieties, such as is found in the tombs of the VIIIth century B.C., and that they resemble very closely indeed not only the pottery of the inhumation burials* of the necropolis close to the temple of Antoninus and Faustina, but that of other cemeteries of the same period in the neighbourhood of Rome. They cannot, therefore, inasmuch as they are the products of a relatively advanced art, be compared with the primitive vases which the Arval brethren worshipped, and which appear to have been of a rough and undeveloped style. It seems most probable, on the whole, that, as I said before, they are the contents of a tomb which was disturbed by the laying of the enormous concrete foundation for the statue.

Another discovery of far greater historic interest occurred in the latter half of April, quite close by; for, at a distance of about twenty yards to the north-west, Commendatore Giacomo Boni, who has directed the recent excavations since they began in 1898, noticed a line of blocks of travertine, which ran in a direction out of correspondence with the lines of the Imperial Forum, but agreeing with the orientation of the Republican period. The removal of some of the travertine slabs of the pavement of late Imperial times which now covers the area of the Forum showed that these blocks formed the north side of an enclosure of irregular shape, but measuring roughly 30 ft. from north to south, and 20 ft. from east to west. This enclosed space had originally been paved with rectangular slabs of tufa, but the upper surface of these had subsequently been hacked away, and over them travertine slabs had been laid—except in one place near the south end. Here the tufa slabs were left to their original height, and others laid over them, so that this portion is 4 in. or 5 in. higher than the rest of the pavement; it is twelve-sided, about 10 ft. across, and was apparently enclosed by a balustrade of slabs of stone, which ran in a circle round it.

This area seems to correspond in position with what we know of the site of the Lacus Curtius, which, as Roman writers tell us, was situated in the centre of the Forum. According to the most popular legend, the spot took its name from Marcus Curtius, who, when a chasm opened in the Forum and the gods demanded the sacrifice of the best that Rome contained, leapt, in full armour, mounted on his charger, into the abyss, which at once closed on him. There were, however, other versions, according to one of which the name came from the leader of the Sabinas in their attempt to take vengeance on Romulus for the rape of the Sabine women. His name was Metius (or Mettius) Curtius, and it was said that when hard-pressed he had taken refuge in the marsh, and hardly managed to escape from it. The third form of the story merely traces the name to one Caius Curtius, who, during his consulship, made an enclosure round the spot where a thunderbolt had fallen. This might perhaps be an attempt to account for the existence of the twelve-sided space at the south end; but the irregular shape of the main precinct agrees better with the first two versions of the legend, which are those more widely current. And with these, and more especially with the second, agrees the representation on a relief now in the Palazzo dei Conservatori (belonging itself to the late Classical period, but probably a copy of a much older original) of a heavily-armed horseman whose steed is stumbling in a bed of reeds.

The identification of the paved area with the site of the Lacus Curtius (which was, we know, dry land at any rate in the Augustan age) seems thus eminently probable; and it is worth noting that the constructors of the system of underground passages beneath the area of the Forum (*Builder*, January 2, 1904) expressly avoided tunneling under the place, whether because of its sanctity, or because the ground was known to be marshy, or for both reasons; and that though the galleries themselves are entirely constructed of solid concrete, owing to the amount of water which percolates through the subsoil of the Forum. Such discoveries as these help greatly in making ancient Rome more of a reality to us. We have not here, it is true, the original Lacus Curtius, but further ex .-tions which will in time be undertaken below the level of the pavement which has recently come to light, and which probably belongs to the later days of the Republic, will, in all probability, throw light upon the origin of the legend.

THOMAS ASHBY, JUN.

* The inhumation tombs are here, at any rate, later in date than the cremation tombs (*Builder*, January 2, 1904, p. 3).

THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

THE annual meeting of the Association of Municipal and County Engineers was held at Shrewsbury on Thursday, Friday, and Saturday, July 14, 15, and 16. The new President, Mr. A. T. Davis, C.E., of Shrewsbury, is County Surveyor of Shropshire, and the first county surveyor to occupy the presidential chair of the Association. Mr. Davis has been an active and respected member of the Association for nearly a quarter of a century, has acted for some years as honorary secretary of the Midland district, and has been an elected member of the Council for a number of years. At the opening of the meeting the retiring President (Mr. W. Weaver, C.E., of Kensington) occupied the chair, and there were present the President-elect, Mr. A. T. Davis, Messrs. T. H. Yabbicom (Bristol), J. T. Eayrs (Birmingham), J. Lobley (Hanley), E. G. Mawbey (Leicester), O. C. Robson (Willesden), O. E. Winter (Hampstead), C. Chambers Smith (Sutton), J. D. Watson (Birmingham), J. P. Barber (Islington), J. S. Pickering (Cheltenham), A. Creer (York), J. Price (Birmingham), H. Richardson (Handsworth), J. E. Willcox (Birmingham), A. H. Walker (Loughborough), J. Gammage (Dudley), W. C. Eddowes (Shrewsbury), M. Lea (Truro), A. D. Greatorex (West Bromwich), W. Welburn (Middleton), A. J. Price (Lytham), T. Caiuk (Worcester), J. A. Crowther (Southampton), W. H. Tressider (Falmouth), T. S. Yates (Waterloo), J. Paton (Plymouth), J. W. Wardle (Longton), G. W. Lacey (Oswestry), W. H. Grieves (Buxton), R. S. Dorman (Armagh), T. W. A. Haywood (Battersea), R. A. MacBrair (Lincoln), F T. Grant (Gravesend), M. J. Fleming (Waterford), R. F. Vallance (Mansfield), C. F. Wike (Sheffield), J. P. Norrington (London), J. Parker (Hereford), C. Brownridge (Birkenhead), F. W. Mager (Walsall), G. Eaton-Shore (Crewe), and others.

The Mayor (Councillor W. F. Watkins) attended the opening of the meeting, and offered the Association a hearty welcome to the ancient and historic borough. He trusted that during their stay they would find many matters of interest in town and country.

Mr. W. Weaver (the retiring President) thanked the Mayor for his gracious and kindly welcome.

Mr. T. Cole (Secretary) read the Annual Report of the Council, which stated that the Association had now 1,060 members. The Council had awarded premiums of 10*l.* to Mr. A. D. Greatorex, of West Bromwich, for his paper on "Municipal Work at West Bromwich," and 5*l.* to Mr. N. F. Dennis, for his paper on "Some Municipal Works at Aldershot." The Council reported correspondence with the Local Government Board on the professional status of the municipal engineer. The committee still had the question of the model building by-laws under consideration, and a mass of evidence had been collected.

The retiring President moved the adoption of the report.

Mr. Yates (Waterloo) raised the question of the payment by local authorities of the expenses of members attending meetings of the Association.

Mr. T. Henry (Retford) and Mr. W. H. Grieves (Buxton), supported the suggestion.

Mr. J. Patten Barber (Islington) said the Local Government Board were very difficult to move, especially when the moving force was the Association. The position the Local Government Board took up was that they could not move at the suggestion of the Association of Officials; the representation must come from the local authorities.

The President promised that the matter should be carefully considered by the Council of the Association, and the report was then approved.

Mr. W. Weaver (Kensington) then moved an alteration in the by-laws to facilitate the amalgamation of the Scottish Association with the Association. The alteration was to enable the Scottish members to join without the payment of an entrance fee, and allowing the Council to dispense with the provision of by-law 2, requiring members to hold a chief permanent appointment.

Mr. O. C. Robson (Willesden) seconded the new by-law, which was carried unanimously.

On the proposition of Mr. T. H. Yabbicom (Bristol), the retiring President (Mr. W. Weaver, of Kensington) was thanked for his services to the Association during the past year.

President's Address.

The newly-elected President (Mr. A. T. Davis), in his inaugural address, having thanked the members for his election, assured them that during his term of office he would endeavour, to the best of his ability, to maintain the high position which the Association now occupied. Having been connected with the Association for close on a quarter of a century, he could not resist looking back to its early days and recalling the progress that had been made. He offered no apology for alluding to its early history, because he held that too much honour could not be given to those far-seeing men—Mr. Lewis Angell, Mr. James Lemon, Mr. Charles Jones, and others—who, recognising the advantages of a common bond of fellowship and professional interests, founded this society thirty-one years ago. It was reported that at the inaugural meeting, held on May 2, 1873, more than 100 engineers and surveyors of various towns had joined the Association. At the close of the last financial year this number had increased more than tenfold, the actual roll of the Association embracing at that date a total of 1,060 of all ranks. This interchange of experiences was of enormous advantage, not only to municipal engineers, but also to the councils they served and the community in general. Indeed, he had no hesitation in affirming that the municipalities of this country had derived immense benefits from the Association in this respect. During the existence of the Association, while the population of the United Kingdom had increased by upwards of 10,000,000, with its concomitant crowding in the larger cities and towns, the rate of mortality had decreased from 21·3 in 1871 to 15·4 last year; and members might fairly claim, along with their colleagues the medical health officers, no small share in the diminution of human suffering and the prolongation of human life represented by these figures. The Council were doing their best to combat the two evils that militated so much against the professional status of the municipal engineer and surveyor—viz., insecurity of tenure, and the occasional appointment, by urban and rural councils, of unqualified men. The remedy seemed simple enough; it was only necessary to follow the precedent set in the case of the metropolitan medical officers of health, who were protected by the Local Government Board under section 108 (*b*) of the Public Health (London) Act, which was as follows:—"A medical officer of health shall be removed by the sanitary authority with the consent of the Local Government Board, or by the Board, and not otherwise." The principal reason for the Local Government Board exercising some control over the appointment of the London medical officers of health was that it would be detrimental to the interests of the public that such should be held by men unprotected in some way, seeing that their duties were of such a character as to bring them into conflict with vested interests, and to render them liable to unjust treatment. But surely these arguments were equally applicable to the engineer and surveyor, whether in London or the provinces, who, in the conscientious discharge of his duties—*e.g.*, in the administration of the by-laws, to mention only one instance, might incur the hostility of some person or persons placed in authority over him. But, apart altogether from the question of security of tenure, it was quite time that the practice of appointing incompetent men and the payment of disgracefully inadequate salaries should cease. The work of the municipal engineer involved the health of thousands, as well as the expenditure of enormous sums of money, and as both these subjects so intimately concerned the public, it was to be hoped that Members of Parliament might be induced to take the matter up. The proposed union with their Scottish *confrères* would, he felt quite sure, prove mutually advantageous, and nothing would be wanting on his part during his year of office to make the union a happy one. A very

important work was being performed by the special committee appointed to make recommendations for the improvement of the Model By-laws issued by the Local Government Board, for both urban and rural districts. He sincerely hoped that the recommendations of the committee when submitted would be adopted by that board.

It would be universally admitted! that very great advantages and economies must accrue from the standardisation of engineering materials, which was being carried on by the Institution of Civil Engineers with the approval of the Government and the co-operation of other institutions and societies, including their own. Interchangeability within proper limits must cheapen the cost of production, and it was gratifying to hear, on the authority of the chairman of the sub-committee which undertook the work of standardising tram-rail sections (Mr. W. Howard Smith), that since the completion of their labours and the publication of the standard sections and specifications scarcely a tram-rail of any other section had been rolled in this country. The Association was also represented on the Pipe Standardisation Committee now sitting under the chairmanship of Mr. Charles Hawksley, past-president of the Institution of Civil Engineers. Their representatives were Mr. F. Griffith, of Leicester, and Mr. W. Watts, of Langsett. This committee was making exhaustive inquiries with a view to standardising all classes of pipes, from rain-water pipes to the large steel and iron pipes for hydraulic power. For a very long period the troublesome problem of sewerage and sewage disposal had exercised the minds and engaged the serious attention of municipal and sanitary engineers, and for upwards of six years a Royal Commission had been making researches into its hidden mysteries. However, without waiting for the final report of the Royal Commission, one could easily see that the complex problem, if not solved, was approaching solution, and engineers, he thought, had acquired sufficient knowledge of natural and artificial methods of sewage purification to enable them, with adequate funds at their disposal, to produce an effluent of any chemical and bacterial standard value that might be required. That no one method was of universal application was as much an axiom to-day as ever it was. If suitable land in sufficient quantity could be purchased at a reasonable price he felt sure that the simple and natural method of irrigation would, in the majority of cases, prove the most satisfactory and economical, but where land was unavailable, equally good results might be obtained by artificial or biological methods. Be the method natural or artificial, however, he was convinced from practical experience and careful observations, that unless the works were entrusted to the management of experienced and thoroughly reliable men, whose aim was purification and not profit, failure and not success would be the result. If the recommendation contained in the third report of the Royal Commission was carried into effect, viz., "that the law should be altered so as to make it the duty of the local authority to provide such sewers as were necessary to carry trade effluents as well as domestic sewage, and that the manufacturer should be given the right, subject to the observance of certain safeguards, to discharge trade effluents into the sewers of the local authority if he wishes to do so," the difficulties of municipal engineers, in some towns at least, would be greatly increased. The fourth report of the Commission was pregnant with interest to all municipal engineers, but more especially to those whose districts contained tidal waters. The Royal Commissioners said: "The treatment of sewage, according to methods at present in use, cannot be relied on so as to alter its character as to allow of its discharge in the immediate neighbourhood of shellfish layings, without incurring appreciable risk of disease being communicated by the consumption of shellfish taken from such layings. In such cases either the sewage outfall must be removed or the layings closed." These observations had a much wider bearing than at first view appeared, as the whole question of sewage treatment and rivers pollution was involved. They were no doubt within measurable distance of the formation of river boards, composed of joint committees of county and county borough councils, under a central authority, with powers over watershed and drainage areas, to prevent pollution of rivers and other sources of water supply, to check waste, and to guard local interests, by preventing water being taken for sale outside a given area. When these watershed areas were formed it was to be devoutly hoped that they would eventually supersede the existing absurd administrative Local Government areas of the country. Whether our inland streams would ever be rendered pure enough, after storage and efficient filtration, to adopt as public sources of water supply he could not say, but it would be an enormous gain to the country at large if this desirable result could be achieved. Possibly a rigorous isolation of typhoid and cholera cases, and the sterilisation of their excreta before discharging them into the drains and sewers, might lead to such a consummation. It was notorious that many of our small towns and country villages were unprovided with water fit to drink, and were positively crying out for this necessity of life. It was anything but creditable that this state of things should be possible in these advanced days of sanitation. It proved conclusively that the law on the subject was ineffective, and that a change was absolutely and urgently needed. The county councils were doing their best with the feeble powers which, in this respect, they possessed, to bring about an improvement, but progress was very slow indeed. For some years past the County Council for Shropshire had been trying to induce several urban and rural districts devoid of a proper supply of water, to combine for the purpose of obtaining one, and eventually succeeded in grouping certain districts into a water supply board. This board promoted a Bill in the present session of Parliament, which, however, emerged from the ordeal of Committee curtailed to such an extent as to reduce its value and usefulness very considerably.

With reference to highways, he said, while traction engines and the heavy motor lorries were cutting up the roads, the users of swift-running light motors were demanding smoother and better surfaces which enormously increased the difficulty of the situation. The motor-car had brought in its wake a problem in the form of dust, the solution of which would in itself bring about this change. The clouds of dust raised by the motor-cars were principally caused by the sucker-like action of the wide pneumatic tyres of their small wheels. This action was positively injurious to the macadamised road crust, in that it sucked out the binding material which held the macadam in place, which was naturally followed by disintegration of the crust itself. This dust nuisance had exercised the minds of many people, and patent "dust-layers" were already in the market and were said to be a panacea for the evil, such as "Westrumite," "Pyne Oiline," and other oily liquids for sprinkling on the roads. These, however, were only palliative measures; they might prove very useful in special cases, such as automobile trials, race meetings, and other gatherings of a like character, but he feared they would prove too expensive for general permanent use. The real remedy must be founded on the principle that "prevention is better than cure," and their chief roads, at least, would have to be coated with an impervious material which would resist the sucking action mentioned, and, at the same time, be strong enough, together with the foundation coat, to bear heavy traction traffic. If this change was to be brought about without friction it must be done without adding materially to the present cost of maintenance, and he could not think of any better or more economical material for the purpose than tar-macadam. There was nothing new in the principle of mixing tar with road metal, but many of them must be interested in the experiments of one of their members in the use of selected furnace slag for the purpose, which, while yet warm from the furnace, was made to absorb the tar which it was alleged thoroughly saturated it and rendered it waterproof throughout. If this material was found in actual practice to be sufficiently tough to resist the wear and tear of heavy traffic the fact that it could be produced at a reasonable cost, especially in the neighbourhood of blast furnaces, would lead to its extended use, both in town and country, in the place of ordinary macadam. The gain to the travelling public from roads of this class would be of enormous value. Tractive force would be considerably reduced, especially when compared with that exerted under existing conditions, such as dust in summer and mud in winter, both of which conditions greatly increased resistance to traction; dust would be reduced to a minimum, and automobilists would be enabled to lay aside their unbecoming garments for something more beautiful; the roads would be kept in a better sanitary condition, as rain, instead of injuring them, as at present, would have a cleansing effect on their impervious surfaces. With roads of good, hard, smooth surfaces—yet not too smooth on the steeper gradients—there would be less necessity for light railways and tramways which rendered the roads less commodious and useful for ordinary traffic. Motor omnibuses would take their place as means of communication between town and country, and would be much more effective, inasmuch as they could go to the very doors of the people. This would probably assist in arresting the migration of the country population to the towns.

It had often occurred to him that it would be much better that building by-laws should be abolished in favour of a general building Act. This would do away with the present anomaly by which builders were able to erect what they liked in one district where there were no by-laws, while perhaps in an adjoining district they were compelled to observe a rigid set of laws. Surely it would be better to fix minimum standards for town and country respectively, and make everybody adhere to them rather than to have rigid regulations in one district and none at all in another. However, so long as the law remained as it was, they must make the best of it.

Mr. Robson (Willesden) proposed a vote of thanks to Mr. Davis for his address, which was seconded by Mr. E. G. Mawbey (Leicester), and carried by acclamation.

American Sewer Design and Construction.

Mr. S. Hodgson, Assoc.M.Inst.C.E., read a paper on American sewer design and construction. He said the circumstances which led up to the construction of the Boston Main Drainage Works—distinguishing them from the metropolitan works, to be referred to hereafter—were commonplace enough. It was on record that in 1870 an aggregation of old city sewers discharged by about seventy outlets into tide-water, chiefly along the harbour front, with the customary results. In 1875 the problem was submitted to a commission of medical and engineering experts, who were asked to report as to the best means of providing main drainage facilities for the entire area of the city, having at that date a population of about 340,000 and occupying an area of 37½ square miles. A further area of 20½ square miles in the Charles and Nepouset river valleys, naturally tributary to any system of this character, was also included in the reference, the entire 58 square miles lying to the south of the Charles river. The more thickly settled portions of the city itself obviously demanded preference in any remedial measures to be undertaken, and the physical features of the territory greatly favoured the claim. In view of these conditions, it was decided to proceed at once with the construction of the low-level system and to postpone the building of the high-level gravity sewer until such time as the increasing density of population and other causes should call for action in that direction. The harbour outfall works, on the other hand, were made of sufficient capacity to receive in addition the sewage of the entire high-level district, and an inlet for this purpose was provided at Squantum. The original works of the low-level system—known as the Boston Improved Sewerage—were constructed between 1877 and 1884 at a cost of 1,000,000*l*. They comprised 25 miles of main and intercepting sewers, ranging from 2½ ft. to 10½ ft. diameter, located generally along the tidal margins of the city and lying mainly below the level of low tide; a pumping station at Old Harbour Point, where the sewage was lifted about 36 ft. through force mains into twin deposit sewers, each 8 ft. wide and 16 ft. high, in which heavy matters settled before the sewage reached a 7½ ft. tunnel, 7,160 ft. in length, crossing under Dorchester Bay; an outfall sewer, 11 ft. high and 12 ft. wide, 5,900 ft. in length, built on an embankment and connecting the tunnel with open reservoirs on Moon Island, where the sewage was stored during the latter half of the ebb tide and the whole of the flood tide; and a discharge conduit leading to the tidal currents in the harbour. The original capacity of the reservoirs was about 20,000,000 gallons, but additions made within the last five years had increased this to 40,000,000 gallons. Similarly the original pumping plant, with a nominal capacity of 42,000,000 gallons per day, had been brought up to a total of 150,000,000 gallons. The system was designed for an ultimate population,

on the 15 square miles, of 600,000, a mean of sixty-three per acre. The water supply was taken at 62 gallons per head per day, with a maximum rate of flow equal to twice that volume, and provision was made for a volume of rainfall, actually reaching the sewers, equal to a depth of ¼ in. falling in twenty-four hours. The works were constructed, and were still owned and operated, by the City of Boston. They provided, beyond a doubt, for the most urgent part of the general sewerage problem of the metropolitan district, but left a large and growing population without any satisfactory means of sewage disposal. One result of this was the gradual extension of the city area made tributary to the pumping system, a process of no avail in relieving those outside areas which had been recognised as forming part of any rational drainage district. The problem, as affecting those portions of the Mystic and Charles river valleys, was complicated by the difficulty, in many cases amounting to impossibility, of dealing with the sewage of any given area within the borders of the municipality affected, and it was finally recognised that no authority, other than that of the State of Massachusetts, was sufficiently comprehensive to embrace the entire district to be served. Successive commissions, beginning with the Metropolitan Drainage Commission of 1881, made a study of the situation, but the matter was brought to a head by the State Legislature of 1887 directing the State Board of Health to consider and report on a general system of main drainage for the relief of the two valleys, comprising a metropolitan area of 114 square miles. The report, submitted in 1889, recommended the division of this district into two parts, with an independent harbour outfall for the larger portion (72 square miles) north of the Charles river, containing a population, in fourteen municipalities, estimated at about 280,000 in 1890. The execution of the scheme was begun in May, 1890, the Charles river system being completed two years later. The execution of the north metropolitan system, carried on simultaneously, was a much larger and more difficult undertaking, and it was not until the spring of 1896 that the entire system could be said to be in operation. The total cost of the original works of both systems amounted to about 1,200,000*l*. The author then proceeded to deal with the various additions to the original works up to 1904. The expenditure on metropolitan systems was met by contributions from the various municipalities, devised to cover the repayment of principal and interest in forty years, and the annual cost of maintenance and operation was likewise borne by the respective areas. In order to bring the payments under the first head more nearly into proportion to the increased use of the system by a growing population, it was provided by the Act that, instead of refunding one-fortieth of the entire sum in each year, the payment should be apportioned as follows: 5-fortieths in the first ten years, 6¾-fortieths in the second ten years, 13½-fortieths in the third ten years, and 15-fortieths in the fourth ten years. The bonds bear interest at the rate of 3 per cent. per annum. While he had been enabled to place a concrete example before English municipal engineers, there were some leading features, affecting American sewage works generally, to which it might be well to refer. Among these the most prominent and important was the tendency towards the separation of rainfall from sewage which the late Sir Edwin Chadwick laboured to promote in Great Britain. American ideas on this subject were of a very advanced type, inasmuch as they did not tolerate the exclusion of roof and yard water from the rainfall conduits. It must be said of Americans, in this as in other respects, that they had the courage of their convictions. As exemplifying this characteristic, the author might say that while he had never known in America of a case in which ventilating manhole grids were closed on account of alleged nuisance, this step was becoming increasingly common as a means of preventing the ingress of rain water to "sanitary" sewers. This procedure was greatly facilitated by the growing practice of dispensing with disconnecting traps between houses and the street sewer, but this had not been brought about by an objection to open grid sewer ventilation. The absence of complaints in this respect had, in fact, always impressed him as being one of the most remarkable facts connected with American sewerage works, and he was constrained to attribute this immunity, at least in part, to the more generous use of water demanded by American ideals. The study of rainfall records, and the application to them of available formulæ, had resulted in America in a noteworthy expansion of ideas in regard to the dimensions of rainfall conduits. On the other hand, the rigidity with which it was regarded as possible to adhere to the exclusion of rainfall from "sanitary" sewers had had its effect in reducing the size of the latter to an extent otherwise impossible. In this way, 8-in. pipes might be said to be the standard for ordinary street sewers, a fact exemplified in the system designed by American engineers for the City of Havana in 1900, in which 89 miles, out of a total of 124 miles, were of that dimension. The use of small pipe sewers carried with it the obligation of limiting the ingress of subsoil water, as conforming to that general restriction of volume which was aimed at in "sanitary" sewers. Contrary, however, to English practice, what were known as patent pipe joints were not used, reliance being placed upon the filling of the annular spaces with Portland cement, generally mixed with a small proportion of sand to prevent cracking.

Mr. J. Price (Birmingham) said the paper was interesting in that it dealt with engineering in another country. When they looked at the main features, and saw they were dealing with a population of sixty-three to the acre, and the water supply was taken at 62 gallons per head per day, and that, owing to the increase of the impermeable area, the consumption of water had risen to 100 gallons per head per day, they would see what a different problem they were dealing with in America to what they were in England. If they were going to have 100 gallons of water per head, with only a small quantity of sewage in it, they were getting very near the point at which they could use the storm overflow. With reference to the separation of storm water from the sewage at Birmingham, with a partial separate system they could eliminate about three-eighths of the discharge in storm time. In the future they would probably be able to raise the proportion of storm water to five-eighths. The Boston method of dealing with the financial question was new; at any rate, he knew nothing like it in England.

Mr. E. G. Mawbey (Leicester) mentioned that in Leicester the late Mr. Gordon introduced a separate system, by which he succeeded in cutting off about one-half of the rain water from the foul water sewers.

Mr. Pryce (Lytham) remarked that if street grids were never closed in America on account of complaints, American sewers must be better ventilated than they could ventilate sewers in this country, or they must flush them more, or the people must be more long-suffering than the English people were, because he did not see how it was possible to avoid some smell if the ventilator was at the ground level.

Mr. S. G. Hodgson, in reply, said the amount of supervision they got on engineering works in America was infinitely greater than anything known in England. They got more money to do the job, and they got more highly-skilled men to do the work. There was a more liberal and generous spirit in regard to the design and supervision of engineering work than he was able to find in England.

"*The Sewage Problem Solved.*"

Mr. W. D. Scott-Moncrieff read a paper entitled, "The Sewage Problem Solved." He said that in the paper which he read to that Association at Kensington last year, he took the opportunity of stating as clearly as he could what the conditions were which might be regarded as essential to the successful application of bacterial processes to the purification of sewage. These conditions were (1) after subjecting the sewage to that amount of anærobic fermentation which was required for the breaking up of the organic matter into unstable compounds, capable of being fully oxidised to nitrates by the action of ærobic organisms—providing the means by which the zonal changes which take place in downward filtration can be carried on regularly and without any serious alterations in the environment at any stages of the process, such as occur in the "contact" system, in other words uniform distribution. (2) Means by which the ærobic organisms are supplied with no more than the maximum amount of nutriment that they are capable of digesting, in any given time. (3) Means by which a time of rest between each meal is secured so as to avoid the development of gelatinous growths in the filter bed. (4) Means by which the organisms are provided with an air supply proportionate to the amount of nitrification demanded by different kinds of sewage. If these four conditions were under control, to obtain the best results, it was necessary to know, in exact terms, the measured value of the four following factors:—(*a*) The quantity of air necessary for the life processes of the organisms. (*b*) The best rate of flow per unit of filter-bed surface. (*c*) The best period of rest between each discharge. (*d*) The depth of filter required to produce the necessary standard of purity in the effluent. He thought he might claim this as his system, seeing that even now he was the only person who had recognised and advocated that the above factors were the necessary and only conditions demanded by nature in order to obtain complete and final success. The author, on the occasion of the Kensington meeting, described an apparatus which was designed for this purpose, and it was the object of the present paper to show from the actual results, not only that the apparatus had realised all that he expected from it, but that it had even surpassed his most sanguine anticipations. In the able hands of Mr. Hall, manager of the sewage works at Staines, backed up by his surveyor, Mr. Barrett, a new light had been thrown upon the entire subject of sewage disposal and a complete revolution of all our previous ideas on the problem had been inaugurated by the use of this machine. The author's experiments at Ashstead, so long ago as 1898, had prepared him to expect some such result, but even he must confess to something akin to a feeling of wonder when the apparatus showed that in so short a period as ten days, which had hitherto been regarded as wholly insufficient for the ripening of a percolating filter, a strong brewery sewage, taken as it arrived on the works, could be purified to the extent of over 80 per cent. in its albuminoid ammonia through only 4 ft. of gravel, gauged to pass a 1-in. mesh, and rejected by a ½-in. mesh. This marvellous result was obtained not by any new or by an unknown scheme, but by a process which was quite familiar to every one present, by simply doing what he had all along maintained was essential, viz., following the demands of nature implicitly and in all respects. At Stanwell, where the Staines disposal works were situated, the sewage was conveyed from an extensive district, reaching at some points as much as five miles from the outfall, by means of Shone ejectors. It was a strong domestic sewage heavily charged with brewery refuse, and with the trade waste from large linoleum works. Immediately over the sewer, where it was open within a few feet of the mixing-house, and before it had been treated in any way, a Worthington pump, so small that it was quite portable, and which was driven by compressed air, was arranged so as to draw sewage from a short length of suction-pipe provided with a strainer at its intake. About 2 ft. from the pump a relief valve was fixed on the discharge-pipe (which was ¾ in. in diameter) for the purpose of avoiding unnecessary strain on the pump, and to give a less jerky discharge. Immediately over the testing-machine itself a small tank was arranged, into which there was a continuous flow of sewage from the Worthington pump, all the sewage beyond that which was being tested passing away through an overflow pipe provided for the purpose. In this way a continuously-changing sample, varying with the sewage as it arrived at the works, was constantly available. In the small tank further straining was provided for, with the result that the apparatus could be absolutely relied upon to work automatically with only a few minutes' attention during the course of the day. It should be noted that, in any case, the liquid, as it was discharged upon the testing apparatus, being crude sewage, was never so free from suspended matter as the effluent coming from a well-arranged hydrolising tank. The accuracy of the discharge, which took place through an orifice of a fixed diameter, was secured by an arrangement by which a small vertical delivery pipe was made adjustable by a gland and stuffing box that allowed it to be raised or lowered, thus altering the head of liquid so as to obtain any required rate of flow. The rate of discharge was a little over 8 pints per sq. ft. per hour distributed over the upper surface of the filter. The period between each discharge was four and a quarter minutes, and the amount of air being asperated through the filter was at the rate of 4 cubic ft. per hour. If this be taken in gallons, the air supply in terms of that measure was nearly 8 gallons

per ft. of filter surface per hour, or nearly 3 gallons of air per cubic foot of the air space in the filter, allowing about one-half of its cubic contents to be occupied by the filtering material. Taking the air supply in its relation to the flow of sewage, it was nearly at the rate of 8 gallons of air per gallon of sewage per hour. No elaborate analyses were required at these early stages, and only three samples were taken—one of the crude sewage and of the effluent as it came from taps Nos. 4 and 6. The result proved that the filter was already actively at work, the oxygen consumed in the cold in four hours having fallen from 6·15 in the crude sewage to 1·52 at the fourth foot of filter, and gone back to 1·56 at the sixth tap. This showed that everything was going satisfactorily, and so the same conditions were maintained with absolute uniformity until the fifteenth day, when samples of crude sewage, and of the effluent from the fourth tap, were taken in order to estimate the amount of purification that was being obtained in terms of reduction of the oxygen consumed, and of the free and albuminoid ammonia. These proved that the bacterial activity was progressing satisfactorily. On the twenty-ninth day a more elaborate series of analyses were taken, which dealt with the crude sewage and the effluent from the third, fourth, fifth and sixth taps. The results of the improved conditions, together with the greater maturity of the filter, was clearly indicated by the diagram, in which the fourth foot of filtering still showed excellent results, with a curious set-back both in the free ammonia figures between the fourth and fifth tap, and of the oxygen consumed and albuminoid ammonia between the fifth and sixth. There was a trace of nitrite and ·4 of nitric nitrogen per 100,000 parts. They next came to a still more elaborate series of analyses which were taken seven days later on June 22, being the thirty-sixth day from starting, the conditions having been kept absolutely uniform since the twenty-ninth day. The nitrite had risen from a trace to ·2 parts per 100,000, and the nitrite had exactly doubled. The lines of progressive purification at the various filtering depths had become much more regular, showed that far the greater portion of the work was carried out between the surface of the filter and the third foot of depth, and that the comparatively small amount of purification between the third and sixth foot had been effected without the set backs which were in evidence when the air supply was less. The author wished to point out that all these results had been obtained under conditions that in themselves were very far from being favourable, either in respect of the maturity of the filter as a bacterial medium of oxidation, or the condition of the liquid which was taken as it arrived at the works, or the rate of flow, which was probably excessive for this particular sewage. He was quite satisfied that these results were due as much as anything to the uniformity of conditions which were maintained, so as to allow of the organisms taking up their work in zones, where each colony could work with an undisturbed environment. The proofs of the importance of this uniformity was forthcoming at Ashtead, where the mere displacement of a tray led to an upsetting of the process, from which it required two or three days to recover. In these investigations the same element was strongly in evidence, because all the samples immediately deteriorated when the air supply was doubled, although the altered condition was of course ultimately favourable to the improvement which supervened as soon as there was time for the organisms to adjust themselves to the new environment. The author had not yet come across a scheme for the disposal of sewage by bacterial oxidising processes which this apparatus was not capable of clearing up by giving results in exact and comparable terms, and it must be capable of doing so if it included all the factors of the problem and enabled them to be measured and compared. The investigation at Staines had been undertaken upon practical lines, with a practical object in view. The first inquiry had been to discover what the most unfavourable conditions, which, in this case, at any rate, might be looked upon as the least expensive, could be made to yield before considering those that were easily provided, which cost money. It was now quite certain that the Ashtead results could be repeated, at least in the great majority of cases, and that an effluent giving a percentage of 90 per cent. of oxidised to unoxidised nitrogen was within the reach of every one who provided the conditions revealed by the apparatus described.

Mr. Watson (Birmingham) said, though his views agreed very largely with those of Mr. Moncrieff, he felt they had not yet reached a solution of this question. The sewage at Staines was a comparatively weak sewage, which they could screen, and they were bound to get very different results from it than from a sewage which, after hydrolitic change, had such a quantity of suspended matter that they could not possibly get an apparatus like this to work without a good deal of attention. He would not like them to think they would obtain perfect results from the tester, nor that they would be able to obtain results without some little trouble and expense, because there was nothing obtained in this world without trouble and expense.

Mr. J. E. Willcox (Birmingham) said the first thing they had to recognise was the requirements of the Local Government Board. They might say they had a tester, and with it they had produced certain results from a filter of a certain depth, but the Local Government Board would say they knew nothing of their tester, they would have to comply with the requirements of the Board, and if they did not comply they would not get a loan. In designing the distributor which was in use at certain works, he ventured to say Mr. Moncrieff went much further in the solution of the sewage problem than in the design of this tester.

Mr. Bush (Sudbury) asked whether the apparatus could be applied to contact beds.

Mr. Hall (Staines) said that, as Mr. Moncrieff had stated, all the factors could be accurately measured. After eight weeks' experiment with the tester, he was more fully convinced than ever that these factors when applied to sewage would be the means of giving them reliable data.

Mr. Caink (Worcester) suggested that the air should flow through the filters in the opposite direction to the sewage. It seemed to him that they would then get better results.

Mr. J. S. Pickering (Cheltenham) thought the author was adopting the right course with this apparatus as a means of testing some of the conditions which take place on a larger scale. But he ventured to suggest that Mr. Moncrieff had too hastily drawn conclusions from his experiments.

Mr. A. Creer (York) said the crux of the whole matter was the disposition of the Local Government Board in dealing with municipalities. The results obtained from experiments had very little weight with the Local Government Board in inducing them to depart from the hard and fast line they had laid down.

Mr. Moncrieff, in reply, said the appparatus would not apply to contact beds, which, in his opinion, where hopelessly unscientific.

FACTORY AND WORKSHOP ACT, 1901.

We have received from the Home Office the following memorandum, endorsed "Form 718, June, 1904," in relation to the provisions of the Factory Act in regard to accidents:—

"MEMORANDUM AS TO BUILDINGS IN COURSE OF CONSTRUCTION OR REPAIR.

Certain provisions of the Factory Act, relating to the reporting of accidents and examination of steam boilers, apply:—

(1) to premises on which machinery worked by mechanical power is temporarily used in the construction of a building or in structural work in connexion with a building, and

(2) to buildings over 30 ft. in height which are being constructed or repaired by means of scaffolding, whether machinery be used or not;

and the person using any such machinery, or employing the persons engaged in the construction or repair, is responsible (under penalty) for seeing that the provisions referred to are duly observed.

Reporting of Accidents.—When there occurs on such premises or buildings any accident which causes to a person employed therein such injury as to prevent him on any one of the three working days next after the occurrence of the accident from being employed for five hours on his ordinary work, written notice (Form 43) must be sent forthwith to H.M. Inspector for the district.* Every such accident should also be entered in a register kept for the purpose on the premises (Form 73). And, further, if the accident is fatal, or is produced by machinery moved by power, or by a vat or pan containing hot liquid, or by explosion, or by escape of gas or steam, a similar written notice (Form 43) must also be sent forthwith to the certifying surgeon for the district, whose name and address can be ascertained from the Inspector where necessary.

In the year 1903, 115 fatal and 2,044 non-fatal accidents were reported in connexion with buildings in course of construction or repair. It is, however, believed that these returns are incomplete, and the Inspectors are instructed to take proceedings against the persons reponsible, if notice of accident is not sent.

Steam Boilers.—Every steam boiler used in the places and premises in question must be maintained in proper condition, provided with a proper safety valve, steam gauge and water gauge, and thoroughly examined by a competent person every fourteen months. A signed report of the result of the examination must be entered within fourteen days in a register to be kept for the purpose on the premises (Form 73).

If notice of the commencement of a building is given to the Inspector, he will forward an abstract (Form 57), containing a summary of the provisions of the Act relating to buildings.

The official forms can be obtained, directly or through any bookseller, from Eyre and Spottiswoode, East Harding-street, London, E.C.; Oliver and Boyd, Edinburgh; and E. Ponsonby, 116, Grafton-street, Dublin.

Safety Precautions.—The following suggestions, if carried out, would tend to reduce the number of accidents occurring on buildings in course of construction or repair. They are based upon those contained in a Home Office memorandum issued to the building trade in 1902.

(1) Every working platform more than 8 ft. from the ground should, before being used, be provided throughout its entire length on the outside and at the ends:—

(*a*) with a guard rail fixed at a height of 3½ ft. above the platform. Openings may be left for workmen to land from the ladders and for the landing of material;

(*b*) with boards fixed on edge, rising at least 7 in. above the platform, and with their lower edges resting or abutting on the scaffold boards. Openings may be left for workmen to land from the ladders.

(2) All "runs" or similar means of communication between different portions of a scaffold or building should be at least 18 in. wide. If made of two or more boards they should be so arranged as to prevent unequal sagging.

(3) Scaffold boards forming part of a working platform should be supported at each end by a putlog, and should not project more than 6 in. beyond it, unless lapped by other boards, which should rest partly on or over the same putlog and partly upon other putlogs.

(4) Ladders should rise some feet above the place they give access to, and should have a level and solid footing, and be securely fixed at the top point of rest.

(5) Loose putlogs or other timber should not be allowed to remain projecting from the face of the scaffold where hoisting or lowering of material or plant is being carried on.

(6) Where the scaffolding has been sublet to a contractor, the employer should satisfy himself, before allowing work to proceed thereon, that it complies with the conditions named above, and that the material used in its construction is sound.

B. A. WHITELEGGE,
Chief Inspector of Factories.
Home Office, June, 1904."

* If the address of the District Inspector is not known the notice may be forwarded under cover to the Chief Inspector of Factories, Home Office, London, S.W.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE JUNE EXAMINATIONS.

The Preliminary Examination, qualifying for Probationership R.I.B.A., was held in London and the undermentioned provincial centres on June 7 and 8. Of the total number entered—viz., 251—58 were exempted from sitting, and the remaining 193 were examined, with the following results:—

Centre	Number Examined	Passed	Relegated
London	84	61	23
Belfast	3	3	0
Birmingham	9	8	1
Bristol	12	10	2
Cardiff	9	5	4
Exeter	4	3	1
Glasgow	5	4	1
Liverpool	4	2	2
Leeds	24	18	6
Manchester	19	13	6
Newcastle	15	11	4
York	5	5	0
	193	143	50

The passed candidates, with those exempted—201 altogether—have been registered as Probationers. The following are their names:—

M. S. R. Adams, Bedford-park, Chiswick; A. D. Aitken, Airdrie, N.B.; E. G. Allen, S.

Woodford; P. R. H. Allfree, Clerkenwell, E.C.; J. D. Ashley, Sneyd-park, Bristol; H. S. Badenoch, Newcastle-on-Tyne; G. B. Baird, Bridgeton, Glasgow; C. H. Baker, Kingston-on-Thames; F. N. Bamford, Leytonstone, Essex; T. P. Bausor, Cambridge; W. Barraclough, Barnsley; J. B. Barrow, Barrow-in-Furness; F. J. Barton, Bridgwater; V. Cinatti Batalha-Reis, Notting Hill, W.; V. Beer, Southville, Bristol; S. G. Bentley, Farsley, near Leeds; V. H. Birbeck, Cottingham, Hull; A. E. Birmingham, Cliftonville, Margate; J. E. Bolam, Blaydon-on-Tyne, co. Durham; T. H. Bolton, Armley, Leeds; C. G. Boutcher, London; T. Braddock, Wimbledon; F. H. Brazier, Windsor; R. B. Brierley, Bedford; C. Bristow, West Norwood, S.E.; G. A. Bryan, Knightsbridge, S.W.; A. G. Bullock, New Southgate; J. E. Bullock, Walton-park, Clevedon, Somerset; J. S. Burgess, Acton Hill, W.; F. T. Bush, Crouch Hill, N.; C. H. Calvert, Nottingham; J. Carey, Shepherd's Bush, W.; H. Carter, Liphook, Hants; A. J. H. Clarke, Dromore, co. Down; R. H. L. Cock, The Boltons, S.W.; C. R. Cole, Exeter; R. L. Collingwood, Richmond, S.W.; F. S. Cooper, Herne Bay; F. C. Core, Bayswater; A. R. Cornwell, Hanley, Staffs; D. J. Corrigall, Duffus, Elgin; L. V. Cousins, Taunton; C. Diodati Cox, Shepherd's Bush, W.; T. H. Crawshaw, Barnsley; C. K. Crichton, Perth; R. Cromie, Lavender Hill, S.W.; J. A. Crush, Lavender Hill, S.W.; J. C. Davies, Pentrepoth, Morriston, S. Wales; H. D. Dawson, Faversham; W. F. Dawson, Leeds; W. R. Dawson, Halifax; J. L. Denman, Brighton; I. Dixon, Wavertree, Liverpool; F. Donaldson, Bishop Auckland; F. J. Drake, South, Southsea; W. B. Y. Draper, Kensington; B. A. Dyer, Hereford; T. Eager, Holywood, Belfast; A. R. Eaton, Forest Gate, E.; J. M. Fairweather, Dublin; J. H. Farrar, Harehills, Leeds; J. Farrell, Sydney, N.S.W.; G. R. Farrow, Clapham Park, S.W.; E. G. Fidler, Caversham, Oxon; F. H. Fitzgerald, Hither Green, S.E.; T. O. Foster, Ealing, W.; J. A. Fowler, Hastings; F. B. Fulker, Salisbury; J. V. Gibberd, Croydon; E. H. Gibson, Harrogate; G. Gifford, St. John's Wood, N.W.; W. Gill, Stanningley, near Leeds; W. M. Gillow, Alderley Edge, Cheshire; T. G. Gilmour, Glasgow; C. N. Glazebrook, Plymouth; H. Goldstraw, Hanley, Staffs; C. Gordon, Harrow-on-the-Hill; W. G. Gradon, Durham; C. J. Graham, Chiswick, W.; E. R. Green, Sydney, N.S.W.; J. Grieve, Bradford; C. F. Gurney, Headingley, Leeds; H. W. Hall, Liverpool; C. E. Hanscomb, New Cross, S.E.; F. M. Harker, Brighton; W. H. Harrold, Alva, by Alloa, N.B.; A. W. Harwood, Highbury, N.; S. T. Heath, Blackpool; J. D. Henderson, Berwick-upon-Tweed; W. T. Higgins, Hanslope, Stony Stratford; H. S. Higginson, Carlisle; S. Hirst, Marsden, Huddersfield; J. K. Hopkinson, Bury, Lancs.; H. E. Horth, Hereford; T. S. Hosking, Bristol; W. Howe, Barsley, Yorks; W. Hoyle, Greenhithe, Kent; E. LaFontaine Hunot, Burnt Ash Hill, Lee, S.E.; G. E. Hunter, Gosforth, Newcastle-on-Tyne; J. S. Huxley, Eastbourne; W. J. Isaac, Warrington; R. M. Isaacs, Paddington, Sydney, N.S.W.; F. Jackman, Frimley, Surrey; F. R. Jelley, Swansea; C. G. B. Kaye, Harpenden, Herts; J. V. Kershaw, Burnley; F. E. Keymer, Gorleston, Great Yarmouth; D. Kibbler, Stamford Hill; H. L. Kiddle, Tottenham, N.; J. S. Knyvett, Edgbaston, Birmingham; E. Lamster, Darwen; A. L. Levy, Ladbroke Grove, W.; W. Lindsay, Glasgow; D. Longden, Langside, Glasgow; W. G. Lovell, Eastbourne; A. V. Low, Paddington, W.; J. G. N. Marchant, Mansfield; H. H. Meadus, Rochester; H. I. Merriman, Kensington, W.; K. H. Milne, Strand, W.C.; C. W. Mitchell, Shirley, Southampton; H. W. Mole, Newcastle-on-Tyne; H. Morley, South Kensington, S.W.; F. E. S. Munt, Balham, S.W.; F. A. Murray, Pollokshields, Glasgow; S. A. Neave, Longueville, Sydney, N.S.W.; C. J. Newbery, Battle; E. A. Nicholl-Garrett, Hereford; W. Nicol, Blackburn; G. R. Oddy, Northowram, Halifax; G. Parker, Barbourne, Worcester; G. H. Parry, Upper Warlingham, Surrey; W. H. Pearson, Hull; V. H. Peart, Gorleston-on-Sea, Great Yarmouth; F. R. Priest, Clapham Common, S.W.; F. A. M. Rawes, Colleton Green, Exeter; W. S. Read, S. Hampstead, N.W.; P. Richards, Southampton; H. T. Richardson, Handsworth Wood, Birmingham; G. A. Richings, Walton Park, Clevedon; W. W. Roberts, Maidenhead, Berks; H. M. Robinson, Coventry; B. Robson, Scarborough; W. A. Rodger, Cardiff; J. A. Rogers, West Hampstead; C. H. Rose, Balham, S.W.; H. Ross, Belfast; H. A. Ross, Shepherd's Bush, W.; J. P. Salwey, Reading; R. T. Sault, Leicester; J. M. Scott, South Kensington, S.W.; E. D. Sherlock, Withington, nr. Manchester; N. V. Shiels, Randwick, N.S.W.; C. H. Simpson, London; W. H. Singer, Penarth; H. E. Smith, Balsall Heath, Birmingham; R. F. Smith, Hull; R. G. Smith, Reading; J. H. Somerset, Kersal, Manchester; A. W. Stabler, Shincliffe, nr. Durham; A. A. Stamford, Cambridge; A. W. Stelfox, Ormeau Park, Belfast; W. H. Stubington, Cranleigh; A. K. Sutcliffe, Fellscliffe, Ripley; C. A. Sutton, Nottingham; C. Swain, Buxton; E. A. Taylor, Wollstonecroft, North Sydney, N.S.W.; S. P. Taylor, Hanley; G. Thomas, Sketty, R.S.O., Glam.; N. D. Thompson, Whyteleafe, Surrey; E. V. Todd, Blackpool; Nai Tom, Cardiff; J. W. Towe s, Lytham; A. Turnbull, Sunderland; F. L. Turnbull, Newcastle-on-Tyne; W. T. Turner, Redbrook, Barnsley; F. A. Vernon, West Dulwich, S.E.; H. C. Walker, Ulverston, Lancs.; A. R. Walton, Cullercoats, Whitley Bay, R.S.O., Northumberland; F. D. Ward, Hastings; S. J. Ward, Northampton; F. C. Webster, Broughty Ferry, Scotland; W. R. Webster, Aberdeen; A. Welford, Brondesbury, N.W.; R. H. Whiteing, Beverley; J. Whitelaw, Pollokshields, Glasgow; N. Wigzell, Barnsley; J. Wilks, Stockton-on-Tees; E. S. Williams, Taunton; J. H. Willman, Wellingborough; R. S. Wilshere, Leicester; D. M. Wilson, Harpenden, R.S.O., Herts; R. Wilson, Lewisham, S.E.; W. H. Wilson, Burwood, Sydney, N.S.W.; G. C. Wingrove, Bow, Durham; G. W. Wintersgill, Middlesborough; A. S. Wood, South Kensington, S.W.; F. Worrow, Woodford, Essex; W. H. Wright, Battersea, S.W.; J. R. Young, Belfast; N. L. Young, Royton, nr. Oldham, Lancs.

The Intermediate Examination, qualifying for Studentship R.I.B.A., was held in London and the undermentioned provincial centres on June 7, 8, 9, and 10. One hundred and forty-three candidates were examined, with the following results:—

Centre.	Number Examined.	Passed.	Relegated.
London	100	47	53
Belfast	2	1	1
Bristol	7	5	2
Glasgow	3	2	1
Leeds	13	10	3
Manchester	11	8	3
Newcastle	7	4	3
	143	77	66

The successful candidates, who have been registered as students, are as follows, the names being given in order of merit, as placed by the Board of Examiners:—

J. M. Smith, Chelsea, S.W.; R. W. Thorp, Headingley, Leeds; H. B. Richards, Buttevant, co. Cork; J. J. Beck, Doncaster; J. T. Penfold, Hammersmith, W.; B. Watson, North Shields; V. Constable, Springburn, Glasgow; P. F. Warren, Norwich; C. H. Perkins, Wokingham, Berks; H. Wormald, Beeston Hill, Leeds; Q. M. Bluhm, St. Anne's-on-the-Sea, Lancashire; L. Blanc, Earl's Court, S.W.; K. W. Matheson, Clapton, N.E.; H. A. Fairhead, Enfield, N.; T. H. Rhodes, Roundhay, Leeds; C. C. Makins, Harrow; J. W. Hepburn, London; B. W. Oliver, Barnstaple; W. H. Riley, Leicester; C. P. Wade, Yoxford, Suffolk; G. Morland, Croydon; J. R. Hobson, New Eltham, S.E.; H. M. Spence, North Shields; R. C. Foster, Loughton, Essex; D. W. Clark, Twickenham; H. G. Holt, Bolton; T. C. Marwick, Edinburgh; R. G. Spiller, Taunton, Somerset; J. B. Surman, Edgbaston, Birmingham; J. M. James, Weston-super-Mare; S. P. Smith, B.A., Oxon., Leeds; G. M. Stone, Tuxford, Notts; A. A. Carder, Clapham Common, S.W.; E. E. Hodder, Thornton Heath, Surrey; T. M. Bricknell, Shepherd's Bush-green, W.; H. A. Dalrymple, Edinburgh; H. E. Adams, Brixton, S.W.; W. Baird, London; J. B. Cubey, South Shields; H. B. Downs, Guiseley, Yorks; R. J. Tall, Gravesend; G. B. Bridgman, Camden-square, N.W.; G. Dunn, London; C. M. Drewitt, Southport, Lancs; W. H. Johnson, Great Yarmouth; M. Thompson, Doncaster; F. Osler, London; M. E. Stahl, Weston-super-Mare; H. L. Bown, Harrogate; C. B. Smith, Ipswich; W. A. Mackay, Seven Kings, Ilford; G. W. Jarrett, Wandsworth Common; A. H. Kirk, London; W. Sutcliffe, Todmorden; B. C. Hill, Bristol; E. B. Crossley, Sherwood, Nottingham; D. M. Addis, Edinburgh; W. J. Brough, Finsbury Park, N.; W. W. J. Calthrop, Farncombe, Surrey; H. Carnelley, Barnsley; W. T. Clarke, Liverpool; J. O. Cook, Plumstead, S.E.; B. R. Gribbon, Leeds; R. F. Gutteridge, Southampton; A. H. Hasnip, Hastings; C. J. Hazard, Stoke Newington, N.; S. T. Hennell, Wandsworth Common; H. D. Hird, Halifax; E. A. Jackson, Wood Green, N.; N. Jones, Southport; J. N. Keasley, Meadvale, Redhill; F. W. Langman, Notting Hill, W.; T. S. Lello, Goodmayes, Essex; P. Minor, West Didsbury; A. Pursglove, St. Helen's, Lancs; W. C. B. Sinclair, Lynton, Bexley, Kent; B. C. Westwick, Mansfield, Notts.

The Final and Special Examinations, qualifying for candidature as Associate R.I.B.A., were held in London from June 24 to June 30. Of the sixty-seven candidates admitted, thirty-two passed, and thirty-five were relegated in certain subjects. The following are the names of the passed candidates, the † prefixed to a name signifying that the candidate passed the Special Examination designed for candidates exempted by resolution of the Council from the Preliminary and Intermediate Examinations and from submitting testimonies of study:

E. G. Allen, Croydon; †R. J. Allison, Honor Oak-park, S.E.; W. H. Bagot, Portland-place, W.; W. J. Ball, Warrington; E. Bates, East Croydon; C. Batley, Little Roundwood, Ipswich; W. E. Brown, Camberwell, S.E.; A. N. Campbell, Hampton-on-Thames; C. M. Childs, London; B. C. Chilwell, Wednesbury; C. B. Cleveland, Earl's Court-gardens, S.W.; †J. C. Cook, Cape Town, South Africa; N. Culley, Huddersfield; †S. C. Curtis, London; W. T. Curtis, West Dulwich, S.E.; W. J. Davies, Sidcup; A. H. Gloyne, Richmond, Surrey; H. P. Gordon, Harrow-on-the-Hill; P. W. Hawkins, Beckenham; B. B. Hooper, Brixton, S.W.; V. Hooper, Redhill; P. C. Pilling, Bolton; K. D. Robinson, Westminster, S.W.; †G. A. Ross, Montreal, Canada; T. T. Sawday, Leicester; A. Scott, jun., Dennistown, Glasgow; N. O. Searle, Paternoster House, E.C.; R. E. Stewardson, Upper Tooting, S.W.; F. E. Stratton, Figgs Marsh, Upper Mitcham; P. J. Westwood, Haymarket, S.W.; G. H. Widdows, Derby; F. Wilson, Sheffield.

The following shows the number of failures in each subject of the final:—

I. Design	20
II. Mouldings, etc.	33
III. Materials	20
IV. Sanitation	14
V. Specifications	17
VI. Construction: Foundations, Walls, etc.	9
VII. Construction: Iron and Steel, etc.	22

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring Gardens, Mr. J. Williams Benn, M.P., Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Camberwell Borough Council 2,030*l.* and 1,237*l.* for housing purposes; Poplar Borough Council 13,340*l.* for sewer works, and 25,000*l.* for electric light installation; Stepney Borough Council 1,715*l.* for housing purposes; and the Guardians of St. George's Union 8,500*l.* for Poor Law purposes. Sanction was also given to borrowing the following sums:—4,500*l.* for paving works for Woolwich Borough Council; 15,636*l.* for electric light installation for Islington Borough Council; 18,500*l.* for street improvement, Kensington Royal Borough Council; and 234*l.* for housing purposes, Shoreditch Borough Council.

Engineering Jobbing Works.—The General Purposes Committee reported as follows:—"On May 5, 1903, the Council decided that the revised schedule of prices for engineering jobbing works, adopted on July 16, 1901, should continue in force until September 30, 1903. The engineer and the manager of works agreed after consultation that the schedule should remain in force until March 31, 1904, and that on and after April 1, 1904, a revised schedule to be prepared by them should be adopted. The Works Committee now inform us that a revised schedule has been compiled after a careful consideration of all the items for measured work, which have been modified and altered in many cases. An arrangement has been made whereby the items representing day-work have been eliminated and provision made for the actual cost of labour and materials only to be certified for, with an allowance of 15 per cent. to cover charges and to represent con-

tractor's profit, in accordance with the practice that generally prevails for work executed in this manner. We recommend:—(*a*) That the course taken in continuing until March 31, 1904, the revised schedule for engineering jobbing works adopted by the Council on July 16, 1901, be approved. (*b*) That the revised schedule for engineering jobbing works submitted to and approved by the General Purposes Committee on July 11, 1904, be adopted as from April 1, 1904.

The recommendations were agreed to.

Paris International Exhibition.—The same Committee also reported:—"We report the receipt of a letter, dated June 30, 1904, from the General Administrator of the International Exhibition held in Paris in 1903, forwarding diploma awarded to the Council for its exhibits of photographs and drawings of working-class dwellings. The Architect of the Council has been awarded a similar diploma."

Schools.—The Education Committee recommended, and it was agreed, that the clerk of the Council be authorised to sign on behalf of the Council the contracts with the undermentioned firms at the amounts of their respective tenders for carrying out the following works:—

Electoral Division.	Name of School.	Contractor and Amount of Tender.	Description of Work included in Plans.
New Schools:			
Lewisham	Gordonbrock-street	Mr. W. Downs, £22,863	Three separate one-story buildings providing accommodation for 996 children, also cookery and laundry centre.
Rotherhithe ..	Magdalen-street	Messrs. Spencer, Santo, & Co., Ltd.	One-story school for 372 junior mixed and infants (to take the place of the existing school).
Enlargement, etc.:			
Lewisham	Sydenham Hill-road	Messrs. J. & C. Bowyer, £10,357	Net addition of 94 places, new halls (boys' and girls' departments), combined cookery and laundry centre, enclosing, etc., additional land.
Improvements:			
N. Hackney ..	High-street, Stoke Newington	Messrs. J. Chessum & Sons, £5,133	New halls for all departments, redividing, restepping, and relighting existing classrooms in each department, etc.
Haggerston	Shap-street	Messrs. J. Chessum & Sons, £11,651	Halls for all departments, redividing, restepping, and relighting existing classrooms, staircases, and cloak-rooms, lavatories, teachers' rooms, drawing class and science rooms, etc.

That application be made to the Board of Education for approval to the finished plans of the following special schools, centres, etc.:—

Electoral Division.	Name of School.	Names of Contractors.	Description of Work included in Plans.
Battersea	Basnett-road	On schedule of Messrs. Garrett & Son, contractors, for the physically defective school. Estimate, £3,852	Separate school for 40 older mentally defective boys, together with a manual room; and also a manual training centre for 40 boys.
Chelsea	Middle-row	On schedule of Mr. E. Triggs, for junior mixed school. Estimate, £947	Manual training centre for 40 boys.
Wandsworth ..	Ensham-street	On schedule of Messrs. Lorden & Son, contractors, for new school. Estimate, £475	Enlargement of manual training centre so as to accommodate 40 boys.
Lewisham	Plassy-road	On schedule of Messrs. J. & C. Bowyer. Estimate, £533	Enlargement of mentally defective school by one classroom for 20.

Science and Drawing Classrooms.—A report was submitted stating that the Committee had had under consideration the question of the provision of science and drawing classrooms in ordinary public elementary London County Council schools, together with a suggestion of the Board of Education that the Council should consider whether science-rooms and drawing classrooms should form part of the equipment of a public Elementary school. The Committee recommended that the Board of Education be informed that the Council considered the provision of such rooms to be necessary for the educational efficiency of public elementary schools.

Mr. Leon moved that the report be referred back. He doubted the necessity for every school having such rooms.

Mr. Thompson seconded the amendment, and said that in half the schools in London they had not got these special science-rooms, and if they passed the resolution they might be called upon to provide the accommodation.

Mr. Graham Wallis pointed out that the Board of Education had hung up several plans pending the decision of the Council as to whether they considered the provision of such rooms desirable.

The amendment was defeated and the recommendation carried.

Proposed Woolwich Tunnel.—The Bridges Committee again brought up a recommendation to the effect that the Standing Orders should be suspended to enable the Council to take the necessary steps for promoting legislation in the next session for powers to construct a footway tunnel to connect North and South Woolwich. The estimated cost of the tunnel was 145,000*l.*, the annual charge for interest and repayment on the outlay being 7,530*l.*, and the annual cost of maintenance 2,500*l.*

Mr. Torrance, in speaking against the scheme, urged that the proposal should not be considered until the boroughs of West Ham and East Ham promised to make a substantial contribution towards the cost.

After some discussion, the Council decided, on a division, not to suspend the standing orders by 71 votes to 39.

The scheme, therefore, fell through.

Tramway Receipts.—Mr. Allen Baker, the Chairman of the Highways Committee, in reply to Mr. Hubbard, stated that to realise the committee's estimates of receipts from the electric trams they would require an addition to the income of last year of 66,788*l.* Of that sum in the last three and a half months they had received 32,170*l.* That looked hopeful for the complete realisation of the estimate for the whole year.

All-Night Trams.—Mr. Baker also informed the Council that due notice would be given of any discontinuance of the Council's all-night tram service. The committee were considering whether it would not be necessary to make some slight increase in the fares of the all-night service, which was now being run at a loss, but he promised that no alteration would be made without a previous report to the Council.

Abortive Land Sale.—Mr. Stuart Sankey asked the Chairman of the Improvements Committee if it was a fact that no purchasers were found for the Council's land adjoining Aldwych at the auction on the previous day.

Mr. W. Davies replied that Mr. Sankey's information was correct. The only complaint he had heard from prospective purchasers was that the term of the lease was of so short duration that they would not be justified in expending the necessary money in covering the land. The committee would, therefore, take the matter into consideration as to whether they would recommend the Council to extend the period of the leases from eighty years to ninety-nine years. As to the general conditions, he did not think they were more onerous than those of the other great ground landlords in London, but there was possibly just this difference, that the officers of the Council saw that the conditions were enforced more stringently than was the case with some of the other ground landlords. That might put a little more pressure on the purchasers.

Arbitration: Tottenham Court-road at Bozier's-court.—The Improvements Committee reported as follows:—We have to report that Mr. B. I'Anson Breach, the surveyor appointed by the Local Government Board to make the award upon the final assessment of the property upon which the Council has power to levy an improvement charge in connexion with the widening of Tottenham Court-road at Bozier's-court, has now issued his award. The premises affected are the houses, shops, etc., Nos. 1A and 2 to 5, Tottenham Court-road, Tottenham-chambers, No. 4, Oxford-street, and the entrance to the Oxford Music Hall, Tottenham Court-road. The award determines that the value of all the property in question is substantially and permanently increased by the improvement, and that the enhanced value, after making all fair and proper deductions for rates, taxes, assessment, and impositions on the lands according to such increased value, is 18,996*l.* The Council is entitled to a payment from the owners of the property at the rate of 3 per cent. per annum upon one-half of this sum, which amounts to a charge of 285*l.* 10*s.* per annum. The owners have the right to redeem the charge upon payment of a sum equal to thirty-three times the amount of the charge. We have given instructions for the necessary steps to be taken to give effect to the award, and we report the facts for the information of the Council.

Cardinal Wolsey's Palace.—Mr. Piggott inquired of the Chairman of the Local Government Committee whether anything was likely to be done with regard to Wolsey's Palace, otherwise known as the "Barber's Shop," in Fleet-street, and when it was likely that the public would be permitted to see the ceiling. The existing state of the building was a disgrace, and he did not think there was anything like it elsewhere in the City.

Mr. Johnson, in reply, said unfortunately a dispute had arisen between the City Corporation and the Benchers of the Middle Temple. The sub-soil rights were claimed by the Corporation, and that claim was disputed by the Benchers. He regretted to say that he could hold out no hope of any immediate settlement of the dispute.

New City Fire Station.—On the recommendation of the Fire Brigade Committee it was decided that during the summer recess the solicitor should serve notices to treat for the acquisition of the remaining interests of four houses in Cannon-street and Queen Victoria-street, the site selected for the building of a new City Fire Station, in substitution of the Watling-street station.

Churches and Paving Charges.—The Local Government Committee brought up a report on the subject of securing an amendment of the law so as to remove the anomaly which arises from the fact that whereas places of worship of the Established Church are exempt from contributing towards the cost of paving new streets on which they abut, Nonconformist places of worship are liable to contribute in the same way as other property.

After a short discussion it was decided that the Local Government Board should be approached with the object of obtaining such amendment of the law as will make places of worship now exempt from such charges subject to them.

George Eliot's House.—The Local Government Committee recommended that in connexion with the work of indicating houses of historic interest in London the residence of George Eliot at Holly Lodge, Wimbledon Park-road, Wandsworth, should be commemorated by a memorial tablet. The facts connected with the house have been verified, and the necessary consent obtained to the fixing of the tablet.

The recommendation was adopted.

The Building Act Committee reported as follows, the recommendation being agreed to.

District Surveyor for St. James, Westminster.—"We regret to have to report that the health of Professor Robert Kerr, District Surveyor for St. James', Westminster, is such as to incapacitate him from attending to any business. Professor Kerr is eighty-one years of age, and has been district surveyor for forty-two years, during the last twenty-one months of which it has been necessary to appoint a deputy district surveyor, owing to Professor Kerr being too ill to discharge the duties of the office. Professor Kerr's duties as district surveyor have always been performed to the satisfaction of the Council, but his health has now completely broken down. In the circumstances, and as it is impossible for Professor Kerr to tender his resignation of the office of district

surveyor owing to his being too ill to write, there is no alternative but for us to ask the Council to terminate the appointment. We have extended the appointment of Mr. H. N. Kerr, who has been acting as deputy district surveyor since November 9, 1902, until November 9, 1904, and we recommend that the appointment of Professor Robert Kerr, as district surveyor for St. James, Westminster, be terminated as from November 9, 1904."

Proposed Erection of a Shelter at the Cadogan Hotel, Sloane-street.—They also recommended, and it was agreed, that Messrs. Maple and Company, Limited, be informed that the Council is not prepared to favourably consider any application for consent to the erection of a shelter upon the Sloane-street frontage of the Cadogan Hotel, Sloane-street.

The Council soon after adjourned.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses :—

Lines of Frontage and Projections.

Brixton.—Dwelling-houses with bay-windows and porches on the eastern and western sides of Atherfold-street and northern side of Landor-road, Brixton (Mr. W. P. Goosey).—Consent.

Hammersmith.—A one-story shop on the forecourt of No. 230, Uxbridge-road, Hammersmith (Messrs. Macintosh and Newman for Mr. G. F. Jones).—Consent.

Holborn.—The erection of the Council's Central School of Arts and Crafts and London Day Training College upon a site abutting upon Southampton-row, Orange-street, and Fisher-street (Mr. P. N. Ginham for the Education Committee of the Council).—Consent.

Islington, North.—Two houses upon a site abutting upon the northern side of Anson-road and eastern side of Dalmeny-road, Islington (Mr. A. D. Watson for Lieut.-Colonel E. Tufnell, M.P.).—Consent.

Kensington, North.—A porch at the Congregational church on the south side of Lancaster-road, Kensington, eastward of Basing-road (Mr. W. Theobalds).—Consent.

Kensington, North.—An iron and glass covered way in front of No. 2, Pembridge-square, Kensington (Mr. G. N. Watts for Mr. E. Jacobs).—Consent.

Kensington, South.—An iron and glass covered way in front of No. 43, Phillimore-gardens, Kensington (Messrs. A. E. Hughes and Son for Mr. H. E. Walters).—Consent.

Hackney, Central.—An oriel window at No. 222, Mare-street, Hackney (Messrs. Holman and Goodrham for the Royal London Friendly Society).—Consent.

St. Pancras, East.—Balconies and an external staircase at the eastern end of the Midland Grand Hotel, St. Pancras (Mr. C. Trubshaw for the Midland Railway Company).—Consent.

St. Pancras.†—An external staircase at the south-western end of the Midland Grand Hotel, St. Pancras (Mr. C. Trubshaw for the Midland Railway Company).—Refused.

Brixton.—A projecting show case in front of the railway abutment between Nos. 456 and 462, Brixton-road, Brixton (Mrs. J. May for Mr. A. G. Clark, trading as J. Dent).—Refused.

Islington, West.—Buildings upon the site of Loraine-place, Holloway-road, Islington (Messrs. Burne and Wykes for Sir John Dickson Poynder).—Refused.

Wandsworth.†—Fifteen houses with bay-windows on the east side of Mayford-road, Wandsworth-common, northward of Ravenslea-road, Wandsworth (Mr. H. Bignold for Mr. W. E. Kerven).—Refused.

Islington, East.—A warehouse building at the rear of No. 32, Newington-green, Islington, to abut upon Matthias-road (Mr. J. H. Storrar for Mr. C. Fell).—Refused.

Islington, North.†—A building abutting upon Windermere-road, Holloway-road, Islington (Mr. J. W. Stevens for Messrs. Knowlman Brothers).—Refused.

Width of Way.

Finsbury, East.—Buildings on the site of Nos. 3, 5, 7, 9, and 11, Westmoreland-place, City-road, Shoreditch, with external walls at less than the prescribed distance from the centre of the roadway of the street (Mr. E. Haslehurst for Messrs. Perry Brothers).—Consent.

Rotherhithe.†—A two-story dwelling-house on the site of No. 3, Cornick-street, Southwark-park-road, Rotherhithe, with external walls at less than the prescribed distance from the centre of the roadway of the street (Mr. W. J. Dixon).—Consent.

Rotherhithe.—That the application of Messrs. F. Chambers and Son for an extension of the periods within which the erection of a one-story building on the north side of Gibbon's-rents, Bermondsey, was required to be commenced and completed, be granted.—Agreed.

Woolwich.—A building at the Woolwich cemetery, King's-highway, Plumstead-common, with the forecourt fence at less than the prescribed distance from the centre of the roadway of King's-highway (Mr. F. Sumner for the Council of the Metropolitan Borough of Woolwich).—Consent.

Lines of Frontage and Construction.

Lewisham.—A building on a site on the northern side of Ravensbourne-park and western side of Catford Bridge, Lewisham (Messrs. Hatch and Hatch).—Consent.

Lewisham.†—The retention of a wood and iron building at the rear of No. 39, Silvermere-road, Catford, abutting upon Holbeach-road (Mr. W. G. Robson).—Refused.

Islington, North.—Additions and the carrying out of alterations to a wood and iron chapel of a temporary character on the west side of Hornsey-road, Islington (Mr. A. Goodchild for the representatives of the Hornsey-road Baptist Chapel).—Consent.

Width of Way and Line of Frontage.

Chelsea.†—A cloak-room addition to No. 125, Sloane-street, Chelsea, to abut upon Cadogan-terrace (Mr. R. G. Hammond for Mr. F. C. B. Clark).—Consent.

Hackney, North.—A cellar under the forecourt of "Grafton House," Church-street, Stoke Newington (Mr. H. Kenchington for Mr. A. Benning).—Consent.

Lewisham.†—Three houses, with one-story shops in front, upon the site of No. 63, Dartmouth-road, Forest-hill, Lewisham, with the external walls of the southernmost building at less than the prescribed distance from the centre of the roadway of Dartmouth-place (Mr. E. C. Christmas).—Refused.

Width of Way and Space at Rear.

Whitechapel.—A building next No. 3, Alie-place, Whitechapel (Messrs. J. Hood and Sons for Mr. M. Specterman).—Consent.

Woolwich.—Two houses on the eastern side of Graydon-street, Plumstead-common-road, Woolwich (Mr. C. H. Bidge).—Refused.

Formation of Streets.

Hammersmith.—That an order be issued to Mr. W. J. Ingram sanctioning the formation or laying out of new streets for carriage traffic in continuation of Heath-place, Uxbridge-road, Hammersmith (for Messrs. Griggs Brothers).—Consent.

Lewisham.—That the time within which the new street, to be named Bournville-road, out of the east side of Ravensbourne-park, Catford, was required to be defined throughout by posts and rails, and thrown open to the public as a highway, be extended to three years from January 21, 1902.—Agreed.

Deviation from Certified Plans.

Brixton.—Deviations from the plan certified by the District Surveyor, under sections 13 and 43 of the Act, so far as relates to the proposed re-building of Nos. 44 and 46, Robsart-street, Brixton, abutting also upon Ingleborough-street (Mr. H. Bignold for Mr. W. Slade).—Consent.

Strand.—Deviations from the plans certified by the District Surveyor, under section 43 of the Act, so far as relates to the proposed re-building of Nos. 118 and 120, Wardour-street, Strand (Mr. W. Woodward for Mr. J. Newell).—Consent.

Height of Buildings.

Holborn.—Buildings on the eastern side of Kean-street, Drury-lane, Holborn (Mr. A. Young for the Improvement Committee of the Council).—Consent.

Buildings for the Supply of Electricity.

Bow and Bromley.—A temporary annexe to the engine-room of the electricity generating-station on a site at the corner of Glaucus-street and Yeo-street, Bromley (Mr. P. N. Hooper for Poplar Borough Council).—Consent.

Alteration to Buildings.

Battersea.—Alterations to premises on the north side of Green-lane, Battersea (Mr. F. Banister for the Committee of the Battersea Liberal Club).—Refused.

Hackney, South.—An addition at the rear of "Nursery House," Millfields-road (Mr. G. W. Eyles for Mr. G. Porter).—Refused.

Means of Escape at Top of High Buildings.

Kensington, South.—A deviation from the plans approved in respect of the means of escape in case of fire proposed to be provided in pursuance of section 63 of the Act, on the fifth and sixth floors of a building in course of erection on the north side of High-street, Kensington, at the corner of Brown's-buildings, so far as relates to the formation, at the ground level, of three window openings, measuring 4 ft. by 3 ft. 3 in. each, in the wall separating the shop from the passage leading from the foot of the escape staircase to Clarence-mews (Mr. P. E. Pilditch).—Consent.

The recommendations marked † are contrary to the views of the local authority.

OLD EDINBURGH: THE SECRET OF ITS CHARM.

ON the 13th inst. Professor Baldwin Brown delivered at St. Cuthbert's Hall, Edinburgh, a lecture on "Old Edinburgh; the Secret of its Charm, and How to Preserve it." He began by explaining that he did not intend to speak of the Edinburgh of world-famous monuments, such as the Castle or Holyrood or St. Giles', but rather of the Edinburgh of the smaller picturesque features, which singly were of minor importance, though in combination they imparted to the streets their special physiognomy. By these were meant the divisions and grouping of the masses of the older houses and their rugged masonry; the frequent gables, the dormer windows, with their carved finials, the timber projections, the rough stone slating, the harling, the moulded doorways and inscribed lintels, all of which helped to impart such a pleasant old-world aspect to the more ancient thoroughfares. The secret of the charm of Edinburgh resided partly in the natural features of the site, and partly in the general architectural treatment of the site, with the effective contrast between the classic regularity of the New Town and the picturesque confusion of the crowded and towering "lands" of the Old. It was the latter features that formed the main subject of the lecture. These older architectural relics, with the historical associations which gathered so thickly around them, were among the attractions of Edinburgh which intelligent strangers found of especial interest. They were in this sense civic assets that had really a commercial as well as an artistic and historical value. Their preservation was, from all points of view, a matter of importance, for it must be remembered that they were a class of possessions which, when once destroyed, could never again be restored. The question how to deal with the older parts of the city, so as to retain as far as practicable its ancient charm, was one requiring serious attention. In all large towns there were improvement schemes in progress, and these were commonly preceded by wholesale clearances. In most towns the older property thus eliminated had no value, and was often already in a tumble-down condition. In Edinburgh, on the contrary, the older houses, dating from the XVIIth and XVIIIth centuries, were, as a general rule, solid stone structures, many of which might stand for centuries, and they possessed the artistic and historical value already referred to. For their preservation it was worth while taking a good deal of trouble, and even facing some immediate outlay, which, if Edinburgh retained all her attractions to visitors, would soon be repaid. It was a matter for congratulation that a policy of wise conservation was now in the ascendant in that department of municipal government which had this matter in charge. The old "lands" might have to be gutted and their interior spaces redistributed, but the matter of importance for the charm of Old Edinburgh was the judicious reparation and preservation of the external fabric. Some excellent instances of the carrying out of this policy would be afterwards shown on the screen. It might be hoped that this would be the established policy for the future, both on the part of the city and on the part of corporate bodies and private individuals who were holders of property in the older parts of the town. Whether or not the civic authorities should be armed with certain powers in respect to private property of artistic and historical value was a further question on which it was not possible then to enter. Abroad, in old cities of the class of Edinburgh, such powers were being sought and acquired, and though in Great Britain there was at the moment nothing of the kind, Edinburgh might well take the lead, as she had done on previous occasions, in making the needful application to Parliament. They were fortunate in having as Lord Provost an Edinburgh citizen who yielded to no one in his affection for his native town, and who was sincerely anxious that she should continue to attract from all parts of the world the lovers of beauty and romance, both in nature and art. They were really now at the parting of the ways. Enough remained of the ancient beauties of the town to make the term "Old Edinburgh" still a word to conjure with, but if much more were allowed needlessly to perish, the town was in danger of becoming hopelessly modernised. The matter was ultimately in the hands of the citizens at large, and it was for them to determine how

best to deal with the heritage that had descended to them from the past. He was not a fanatic on the subject of preservation; all they wanted was that they should preserve everything that could possibly and reasonably be preserved.

There were then thrown upon the screen a number of photographs illustrating both the grander and the more homely features of the older Edinburgh architecture, and, in conclusion, it was pointed out that, though more than eighty views had been shown, no one of the more famous monuments of the city had been included in the survey. The minor or secondary features of Old Edinburgh had proved sufficient in themselves to fill the time allotted. This gave an idea of the richness of interest which the city was able to provide. —*Scotsman.*

WESTMINSTER CITY COUNCIL.

THE usual fortnightly meeting of the Westminster City Council was held on Thursday last week at the City Hall, Charing Cross-road.

Piccadilly Improvement.—The Mayor called attention to an error in the return of votes recorded in a division on a report of the Improvements Committee dealing with the widening of Piccadilly between St. James's-street and Duke-street. The motion before the last meeting was that the Council should agree to give a sum, not exceeding 8,000*l.*, towards the improvement. From the counting it appeared that the matter was referred back, but this was wrong. The Mayor put the resolution again to the meeting, and it was carried.

Loans.—It was agreed to make application to the London County Council to borrow 2,146*l.* for sewer works in Bond-street, Park-lane, Regent-street, and Trafalgar-square.

Gift of Pictures.—On the recommendation of the General Purposes Committee, it was agreed to accept four prints of Westminster views, and an etching of the old bridge, Putney, the gift of Coun illor Burch.

Improved Lighting of Parliament-square.—It was decided to enter into an arrangement with the Gas Light and Coke Company for the erection and maintenance of eight lamps in Parliament-square, on the same terms and conditions as attach to the contract recently entered into by them for the lighting of Aldwych. The globular lamps, in clusters of five, on the railings of the enclosed gardens in the centre of the square, will not be affected by the proposed arrangement.

Sewers.—Sanction was given to the City Engineer to renew part of the Kinnerton-street sewer. The Works Committee submitted a report dealing with the question of the proposed construction of a new sewer along Rutland-street, and it was agreed to authorise such sewer, subject to the London County Council agreeing to leave the question as to who is liable to bear the cost to be settled hereafter. Further, it was resolved that the County Council be invited to agree to state a case to the City Council, for submission to the High Court for their decision, whether the City Council or the County Council are liable to bear the cost of constructing the sewer. The engineer's estimate of the cost of the sewer is 2,600*l.*

Wood Paving.—The Works Committee reported having come to the decision that the work of repairing the wood carriageways of Chancery-lane, Sackville-street, Shaftesbury-avenue, Wardour-street, and Hobart-place could be more economically executed under contract than by the Council's own staff, and, having had tenders from Messrs. W. Griffiths and Co., the Improved Wood Pavement Company, and Messrs. Mowlem before them, recommended that the offer of the Improved Wood Pavement Company be accepted. This was agreed to.

Closing of Thoroughfares.—On condition that Mr. C. E. Mallow gives a portion of land in Vardon-street to enable that thoroughfare to be widened, it was agreed to allow Horse Shoe-alley to be stopped up. It was also decided to allow Messrs. Hampton and Sons, Ltd., to close Monmouth-court, Whitcomb-street, on their agreeing to pay 50 guineas, and in future to treat the sewer in the court as a private drain.

Widening of Chandos-street.—The Improvements Committee again reported on the question of widening Chandos-street, in connexion with the May's Building Improvement Scheme:—The cost of widening Chandos-street on the north side from Bedfordbury to St. Martin's-lane, and the partial improvement of the two latter thoroughfares, is estimated by the Valuation Surveyor at 187,000*l.*, while the cost of widening this thoroughfare from No. 40 eastwards as far as Bedfordbury, is estimated at 73,000*l.*, which latter estimate it is considered might be reduced to 60,000*l.* if the owners, etc., of the "Marquis of Granby" public-house would consent to be reinstated on Part of No. 1, Bedfordbury (this estimate includes the value of the portion of No. 1, Bedfordbury, which would be so utilised). At the present moment the Committee were disposed to favour the adoption only of the proposal to widen from No. 40 eastwards to Bedfordbury, providing that the County Council would undertake the improvement, to which the City Council would contribute, and they were communicating with the County Council on this matter. Besides relieving the Strand and general traffic from east to west, and *vice versa*, the improvement would, it was anticipated, facilitate the heavy traffic to and from Covent Garden Market, and the Committee, accordingly, propose to communicate with the Trustees of the Bedford Estate for the purpose of ascertaining whether they will be disposed to contribute towards the cost of the proposed improvement. The report was received.

House-Breaking Operations.—On the recommendation of the Law and Parliamentary Committee, it was agreed that a communication be addressed to the London County Council suggesting that further powers are urgently needed for dealing with nuisances arising from the demolition of buildings in the metropolis, and asking them to include a provision in their next General Powers Bill for dealing with the question.

COURT OF COMMON COUNCIL.

THE usual fortnightly Court of Common Council was held at the Guildhall, E.C., on Thursday last week.

Street Improvements.—The Improvements and Finance Committee submitted a report dealing with the widening of Skinner-street and Mansell-street. It was agreed, on the recommendation of the Committee, to acquire premises at the eastern end of Skinner-street, for the purpose of the widening, for the sum of 6,150*l.*

A recommendation that an arrangement be made for the removal of the buildings over the entrances at either end of Duke's Head-passage was referred back for further consideration.

It was agreed to pay the sum of 1,401*l.* for the portion of the site of St. George's Church, Botolph-lane, needed to widen the public ways of Boltolph-lane and George-lane, Billingsgate.

Illustrations.

SCULPTURE, MUNICIPAL BUILDINGS, CREWE.

THE illustration shows the sculpture executed by Mr. F. E. E. Schenck for the decoration of the new municipal buildings at Crewe, of which Mr. H. T. Hare is the architect.

The idea of the sculpture was to illustrate or symbolise the Industries of the County of Cheshire. The signification of each of the separate figures is given on the plate.

The panels, which are divided by large columns, are carved in Coxbench stone. The scale of the figures is 10 ft.

ST. BARTHOLOMEW'S HOSPITAL.—NEW OUTPATIENTS' DEPARTMENT.

THIS building will contain the casualty and outpatients' department, the special departments, the dispensary, the resident medical officers' quarters, etc.

It will have a frontage to Giltspur-street of about 144 ft., faced with stone, and designed to harmonise in style with the other buildings of the hospital.

The resident medical officers' quarters will be in the front, and in the rear of them will be the outpatients' waiting hall, 140 ft. long and 45 ft. wide, and capable of seating 850 people.

Surrounding this waiting hall there will be twenty rooms, to be used by the house physicians, house surgeons, and others who will attend to the casualty patients, a dental room, two operation-rooms, rooms for the sister, nurses, etc.

Rooms will be provided for the reception of accident and other emergency cases.

A large dispensary will be provided at the south-east angle of the block, with separate entrances and exit for the patients.

On the first floor will be rooms for the treatment of medical and surgical outpatients; and on the second and third floors will be the throat, ophthalmic, aural, diseases of women, skin, dental, electrical, and orthopœdic outpatients' departments.

On the fourth floor will be a clinical lecture theatre, and provision will be made in the basement for baths, isolation-rooms, etc.

The architect is Mr. E. B. l'Anson.

GRAMMAR SCHOOL, NEWCASTLE-ON-TYNE.

WE give illustrations of the design by Messrs. Russell and Cooper, which has been selected for the new Royal Grammar School, at Newcastle-on-Tyne.

The following extracts from the report sent in with the drawings will explain the architects' intentions in the design:—

"The school is disposed on the site to insure as large and uninterrupted a playing area as possible. An alternative block plan is submitted showing the main school block placed south of the sewer (*a*, *b*) in case the Governors should not approve of the main building being placed hard to the boundary in Lambton-road. The school is planned in as compact a manner as possible with a minimum of corridor, the majority of the class-rooms having a southern aspect and the remainder facing east and west. The art-room is incorporated with the main school building, and has a north light. It is on the ground floor off the assembly hall, and is placed in this position so that it will be easily accessible for all the boys in the school. If placed in conjunction with the science school it would necessitate the youngest boys using that school for this purpose only.

The Changing Rooms, Lavatories, and Latrines are grouped together in two blocks for seniors and juniors external to the school, so that they may be accessible to the boys when the school itself is shut. The lockers are ranged round the changing-rooms in two tiers.

The Masters' Lavatories, &c., are arranged in connexion with the juniors' block, and a changing-room is provided for their use. Two shower baths are provided in each changing-room

Future Extensions.—The parts required for the completion of the school are planned in such a manner that they can be carried out without interfering with the working of the school, and when executed would preserve the balance of the scheme. It will be noted that the method of designing the extension leaves unimpaired the appearance of the part of the school to be executed at present when viewed from Lambton-road. To obtain access to the four future class-rooms in the main school, short corridors would be formed across the present locker-rooms, and these could be turned into cloak-rooms.

Design.—The buildings are designed in a simple manner with Renaissance feeling, carrying on the accepted traditional type of the English grammar school.

Materials and Construction.—The walls are to be carried up in brick, with selected red brick facings and Prudham stone dressings. The roofs to be covered with green slates on boarding and felt. All floors to be of fire-resisting construction, with wood block flooring in hall and class-rooms. The entrances, staircases, corridors, class-rooms, and latrines to have glazed brick dados. The joinery to be in yellow deal.

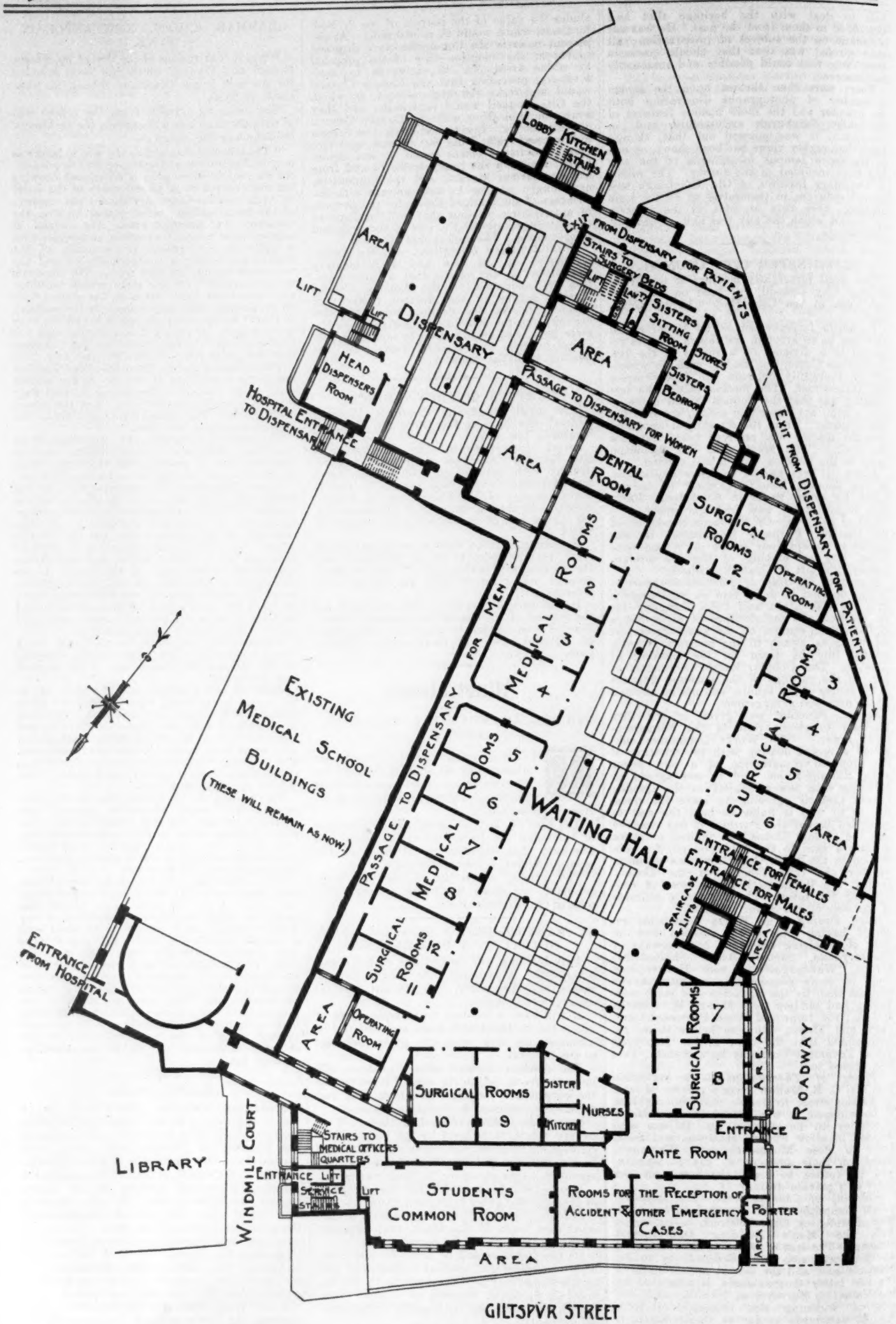
The heating to be carried out on the low-pressure hot water circulation system, with central boiler and cast-iron main, carried either way in subway under corrider and covered way. From these mains service pipes are to be carried to serve the radiators in class-rooms, gymnasium, changing-rooms, and lavatories.

The central hall to be heated by rows of cast-iron pipes underneath the lockers ranged round the walls. A row of pipes to be placed also along the front of galleries to counteract any down draught. Each radiator to be fitted with a proper ventilating base. Extraction flues with gratings, with silk flaps, fixed near the ceiling level to be carried up in the inside walls of the building and collected in the main duct over corridor, and the foul air to be discharged by means of electric fans. The fans and flues to be arranged to effect a change of air six times in the hour in each room. Extraction to be provided through each of the fume chambers in the chemical laboratory and to be connected to separate fan."

COMPETITIONS.

MUNICIPAL OFFICES, SMETHWICK.—In a recent competition for new municipal buildings for Smethwick, to be erected on a site adjoining the entrance of Victoria Park, plans were invited from five architects in the Midlands, and Mr. T. E. Collcutt, of London, was appointed assessor. A special meeting of the Town Council was held on the 11th inst., when it was found that the assessor recommended the acceptance of the No. 2 plans. The sealed envelopes were opened, and it was found that these were the plans of Mr. F. J. Gill, a local architect. The Mayor then proposed that the plans be accepted. Alderman Cheshire seconded, and the resolution was carried.

ETON WAR MEMORIAL COMPETITION.—The assessor, Mr. Norman Shaw, has awarded the premiums in this competition as follows:—First premium, Mr. L. K. Hall, 24, St. James'-street, S.W.; second premium, Mr. Francis Mount (Messrs. Eden and Mount), 3, Staple-inn,



GROUND PLAN

SCALE OF FEET 10 5 0 10 20 30 40 50 60 70 80 90 100 FEET

New Buildings, St. Bartholomew's Hospital. Plan (*See page* 95)

SCULPTURED P

FOR

CREWE MUNICIPAL

MR. F. E. E. SCHENCK

No. 1.—Left Hand Panel:

"SHIPPING" AND "AGRICULTURE."

No. 2.—Right Hand Panel:

"TEXTILE INDUSTRIES" AND "CHEMISTRY."

No. 3.—Centre Panel:

"MECHANICS" AND "ENGINEERING."

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SCULPTURED PANELS

FOR

CREWE MUNICIPAL BUILDINGS.

MR. F. E. E. SCHENCK, SCULPTOR.

No. 1.—Left Hand Panel:

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"MECHANICS" AND "ENGINEERING."

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THE NEW ST. BARTHOLOMEW'S HOSPITAL.—Mr. E. B. I'Anson, F.R.I

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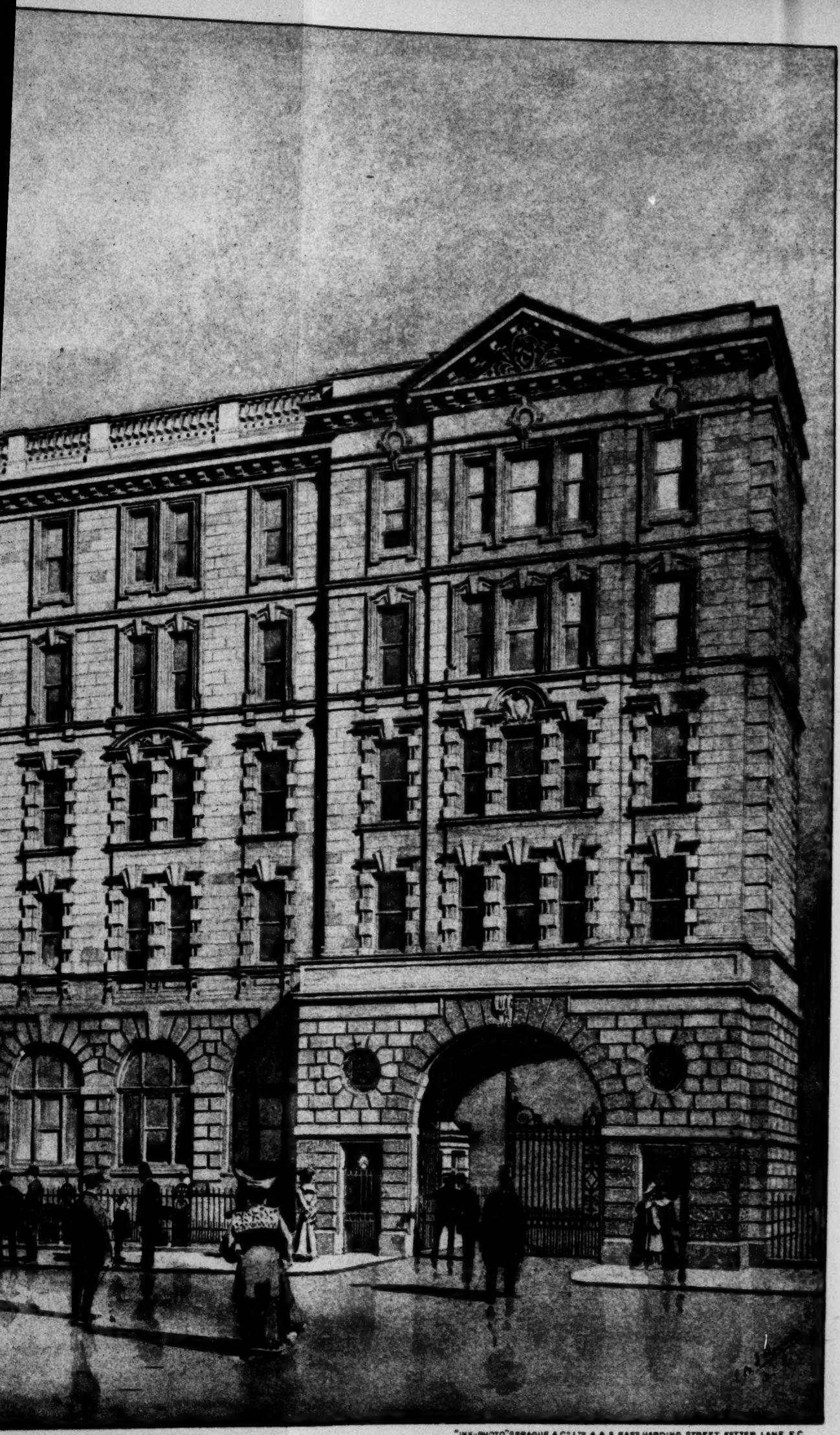

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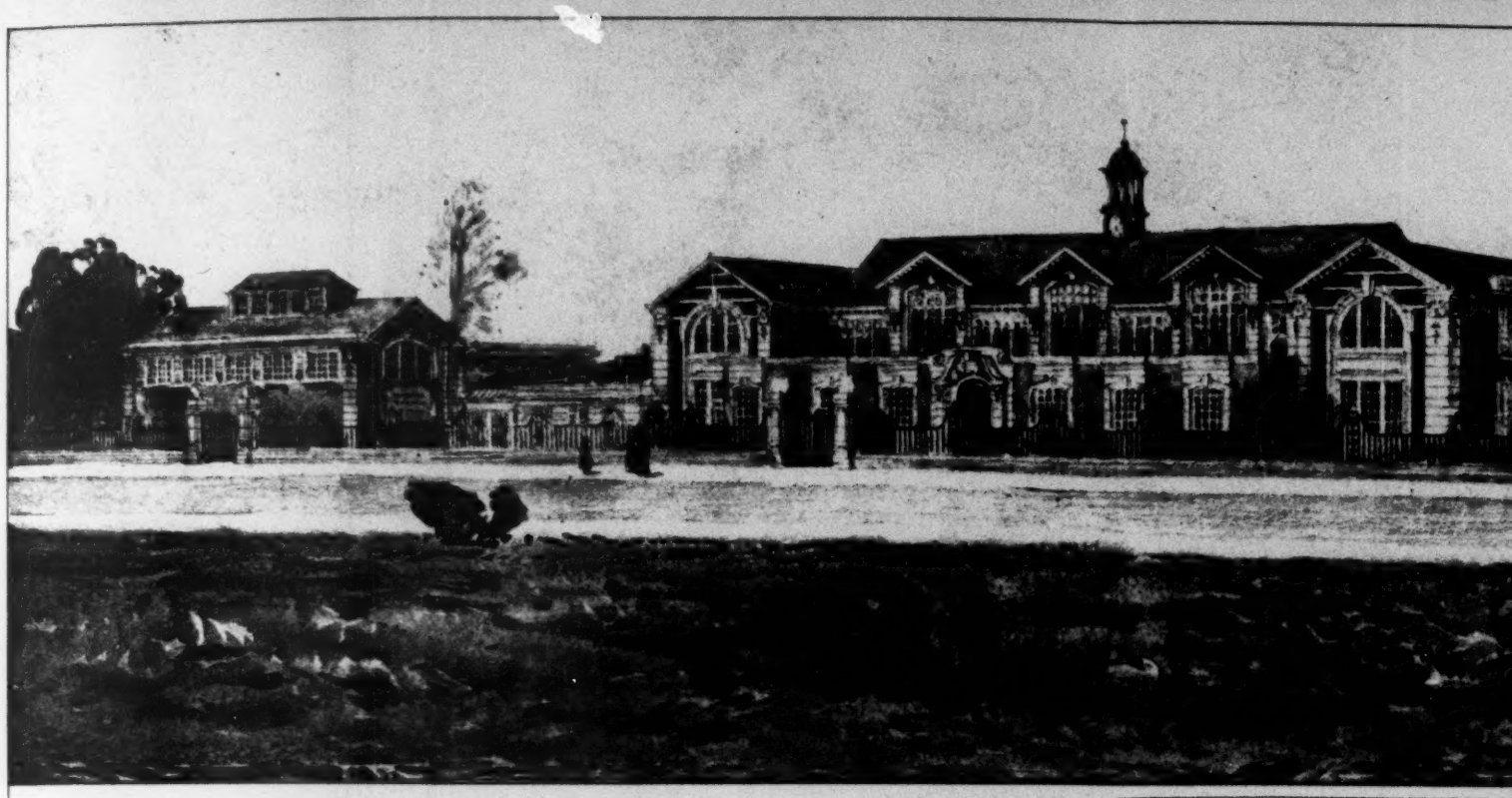
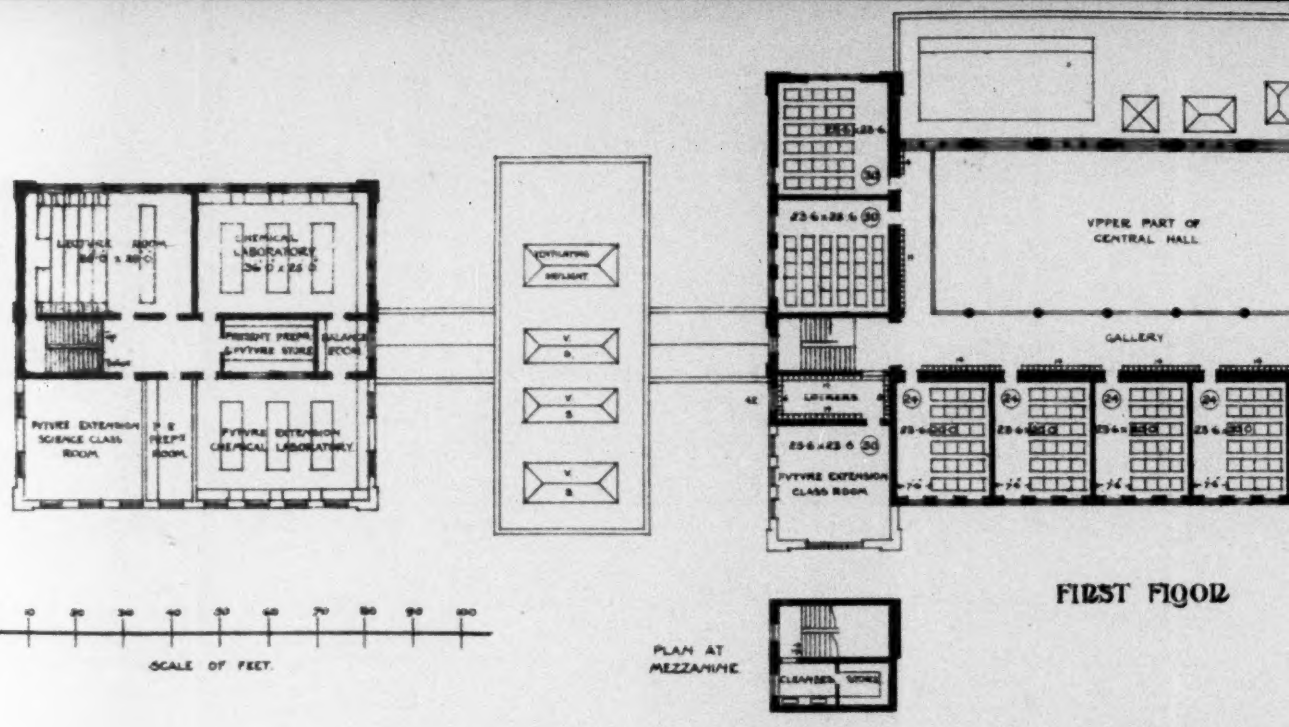
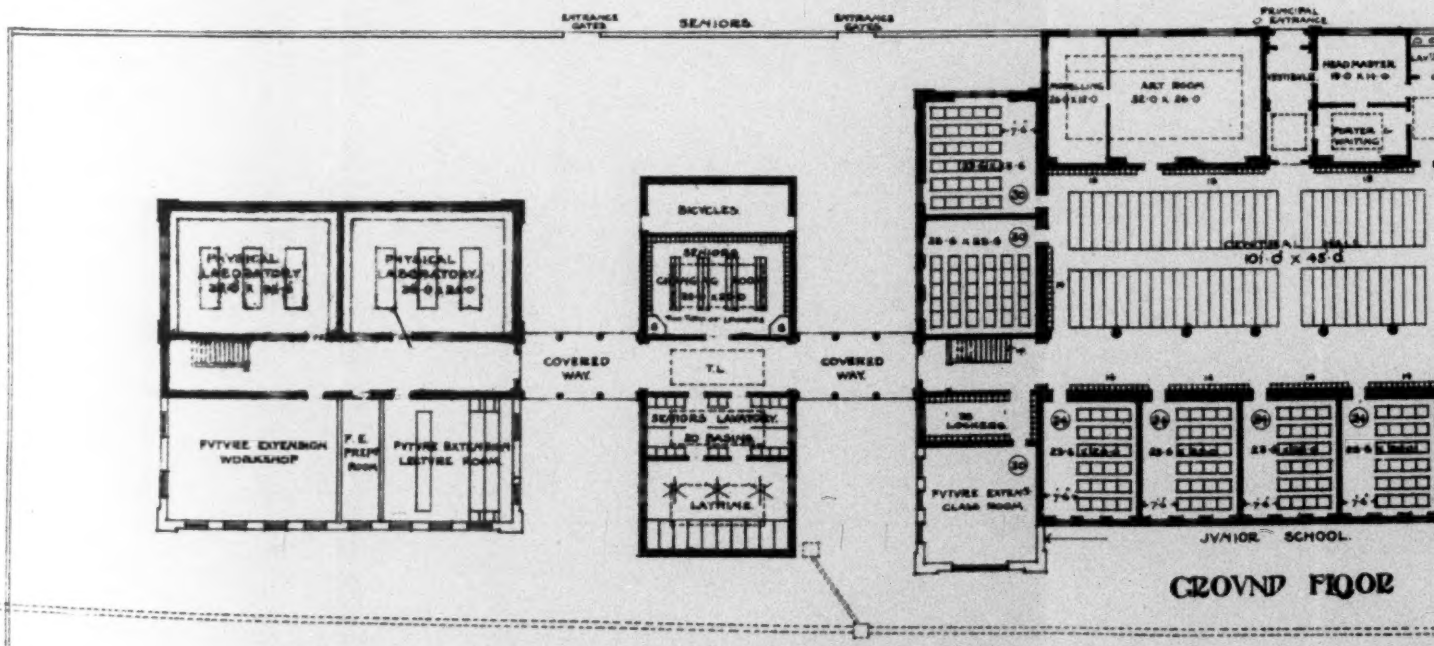
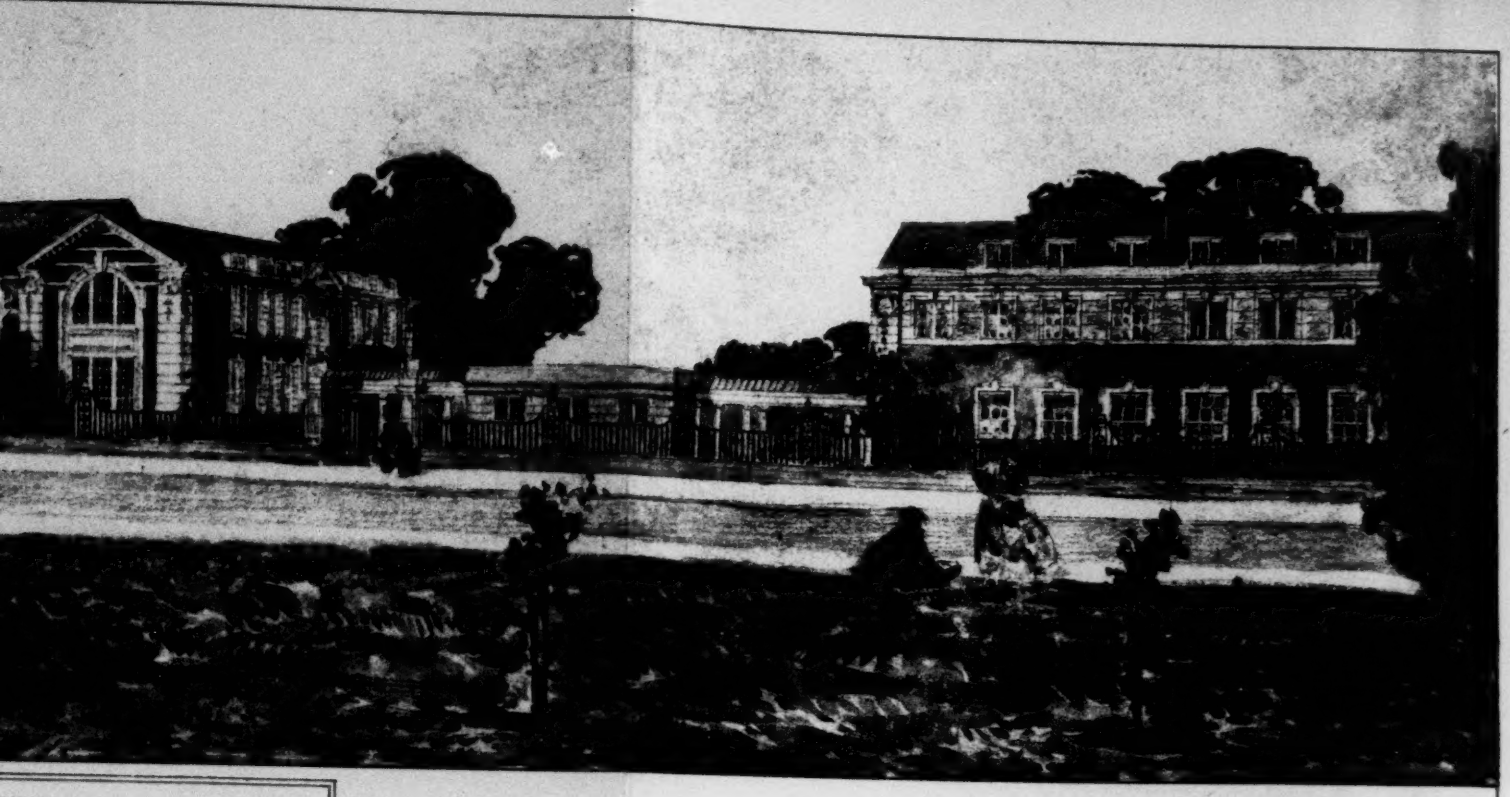
E. B. I'ANSON, F.R.I.B.A., ARCHITECT.

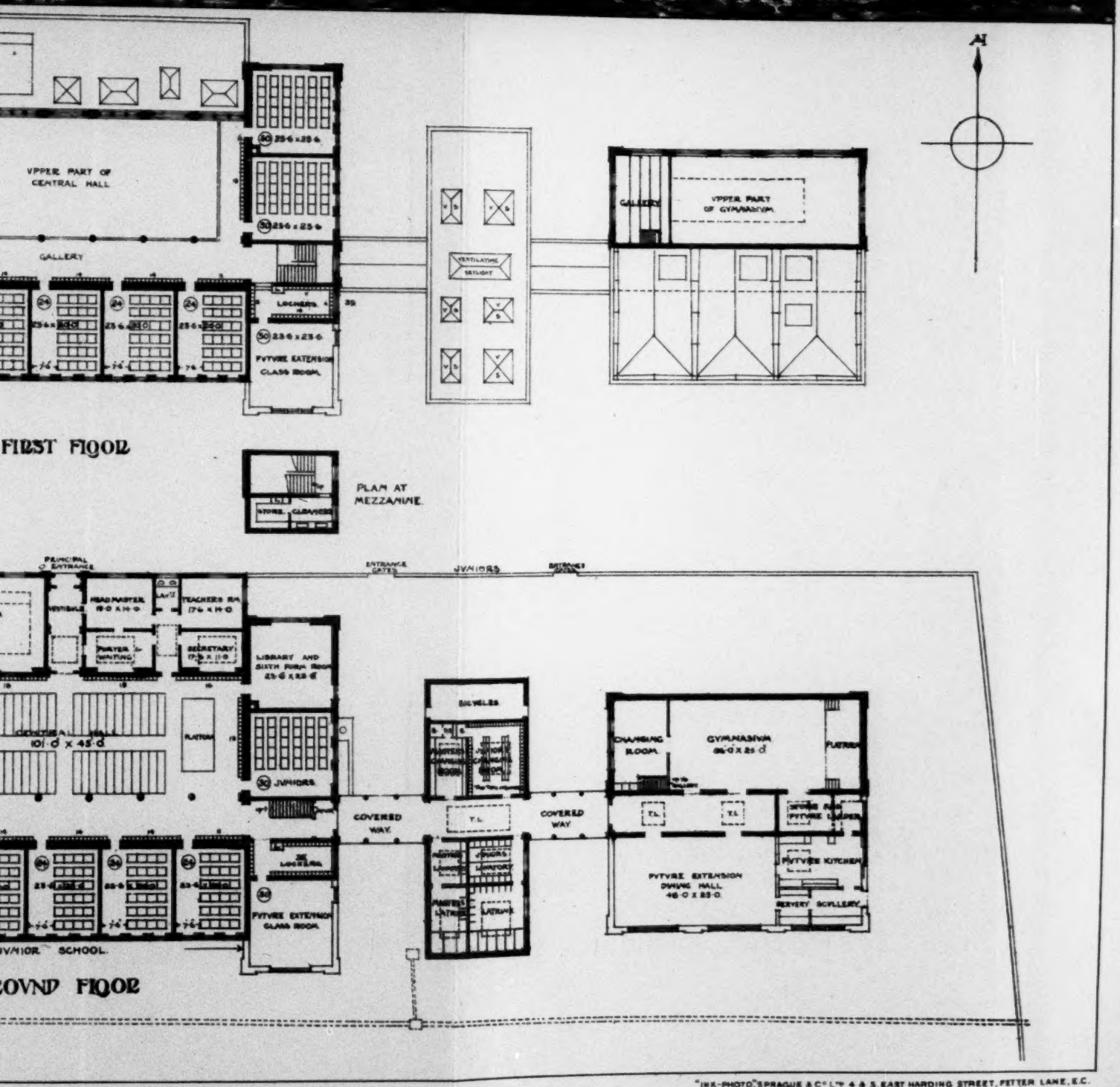






SELECTED DESIGN FOR ROYAL GRAMMAR SCHOOL, NEWCASTL





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SCHOOL, NEWCASTLE-ON-TYNE.—MESSRS. RUSSELL & COOPER, ARCHITECTS.

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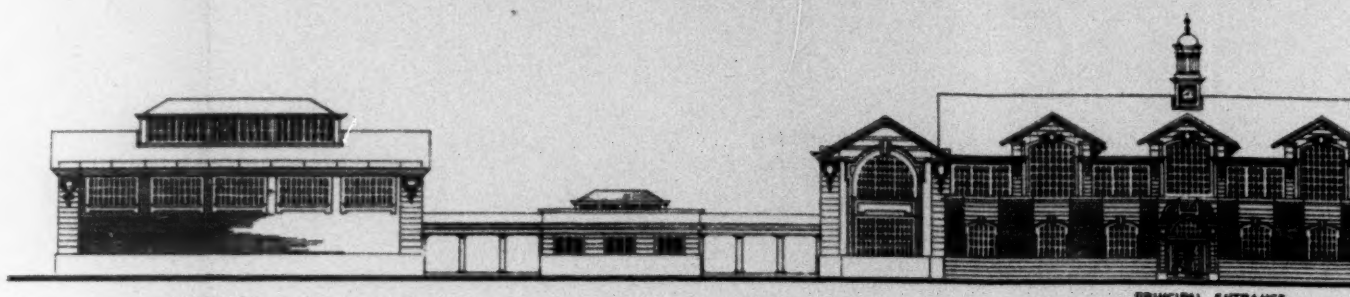
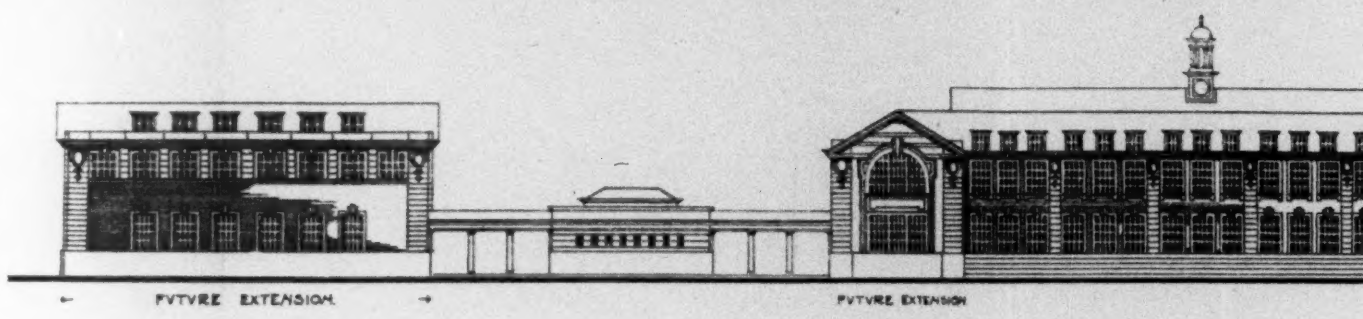


NORTH ELEVATION



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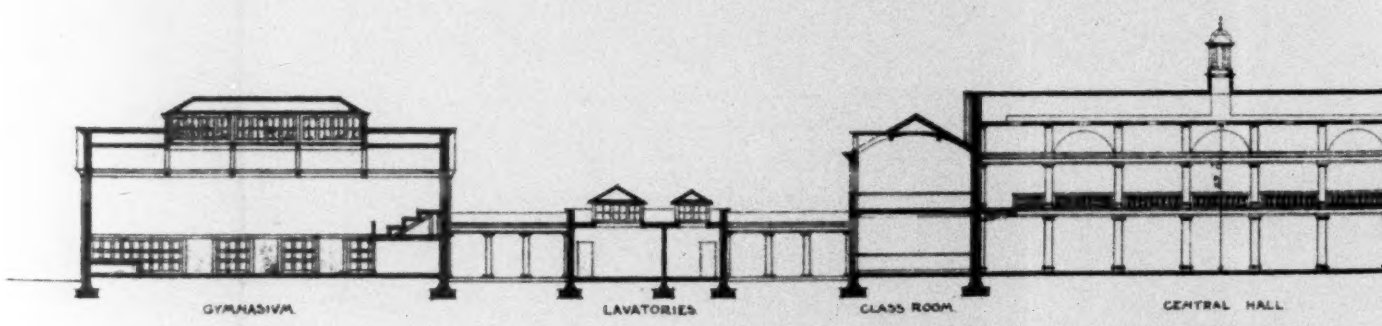
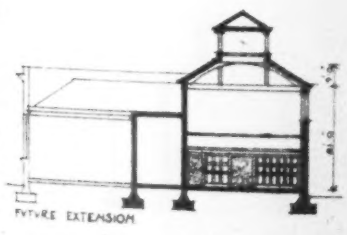
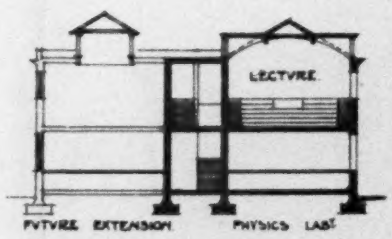


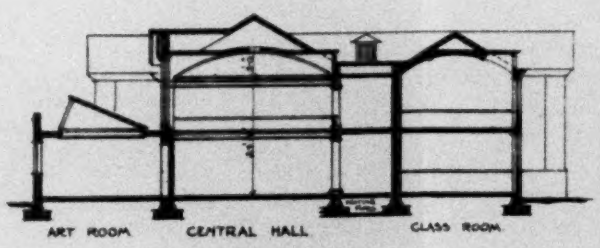
SECTION A.A.



SECTION THRO' GYMNASIVM. & DINING HALL.



SECTION THRO' SCIENCE SCHOOL.



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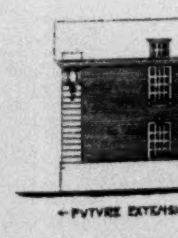

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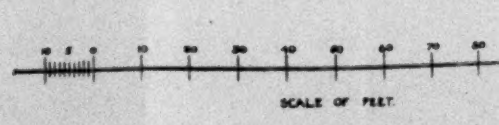

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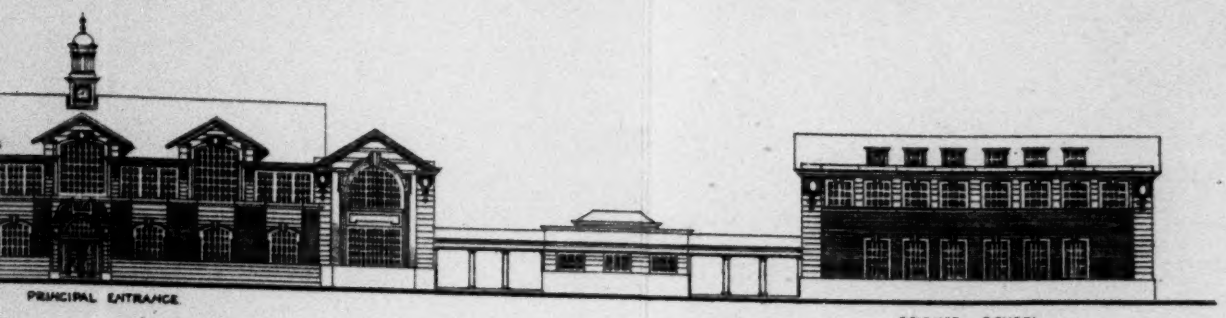
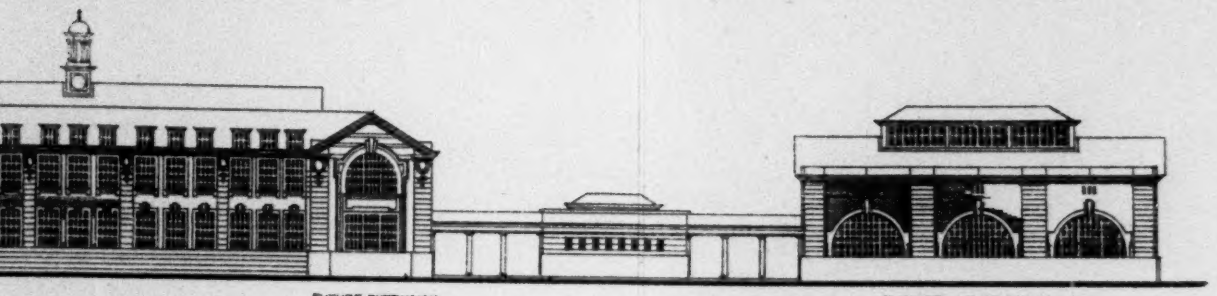


RTH ELEVATION.



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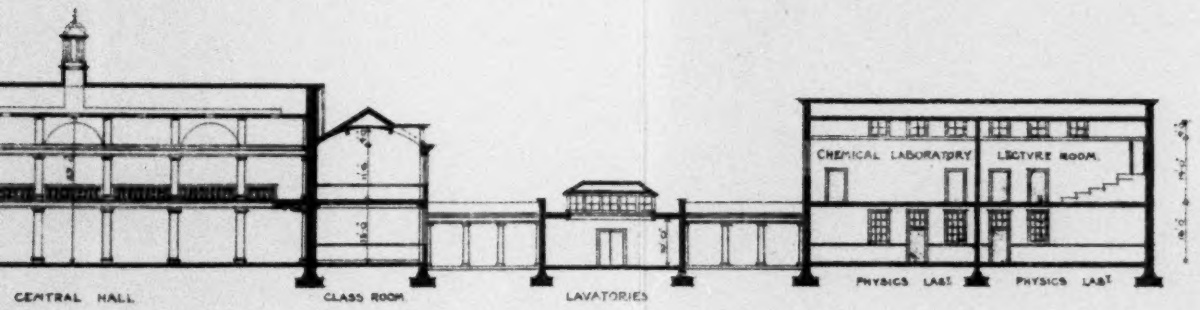

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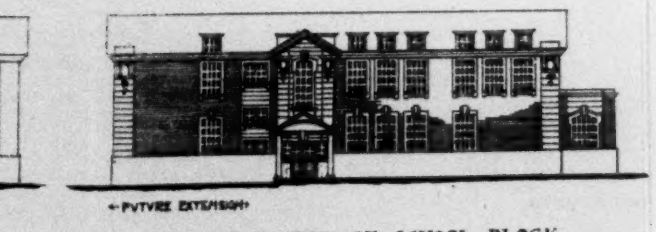
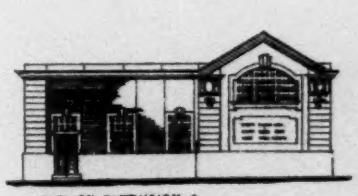
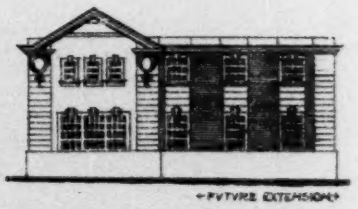


EAST ELEVATION OF SCHOOL BLOCK.



ELEVATION OF GYMNASIVM.



ELEVATION OF SCIENCE SCH

SCALE OF FEET.

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L, NEWCASTLE-ON-TYNE.—MESSRS. RUSSELL & COOPER, ARCHITECTS.

Holborn; third premium, Mr. Ambrose Poynter, 8, Southampton-street, Bloomsbury-square. A note on the subject will be found on page 87.

LONG EATON FREE LIBRARY.—Premiums of 25*l.*, 15*l.*, and 10*l.* were offered in this competition for the best plans and designs, the competition being confined to architects residing in the town. There were five sets of plans sent in, and the awards were given as follows:—First, Messrs. German and Ross; second, Mr. Reginald Smith; third, Mr. W. H. Woods.

BOOKS RECEIVED.

SEA COAST EROSION AND REMEDIAL WORKS. By R. G. Allanson-Winn, M.Inst.C.E. (The St. Bride's Press. 1s.)

BAYEUX: ITS CATHEDRAL AND CHURCHES. By the Rev. R. S. Mylne. (Geo. Bell and Sons. 2s. 6d.)

THE PLANNING OF POOR LAW BUILDINGS AND MORTUARIES. By Albert C. Freeman, architect. (The St. Bride's Press. 7s. 6d.)

TRADE CATALOGUES.

THE Campbell Gas Engine Co., of Halifax, send us their catalogue of "Little Samson" oil engines and "Little Samson" pumping plants. Each type of machine is made in accordance with the standard methods of design and construction adopted by this firm, and the prices appear to be particularly reasonable for the duties quoted.

We have received from the Linolite Co., of Victoria-street, Westminster, a printed copy of a report on the photometry of linolite by Mr. J. S. Dow, of the Central Technical College. Very exhaustive photometric tests were made on this type of straight filament lamp both with and without reflectors. It was found that with a polished aluminium reflector the mean spherical candle-power was highest, a white enamelled reflector came next, and a nickelled copper reflector was a good deal worse than the others. The light thrown forwards over an angle of 70 deg. was practically double of the light that would have been obtained without a reflector. The reflector therefore seems to fulfil its functions in a very satisfactory manner. The report says nothing about the efficiency or the life of these novel lamps.

We have received from the Edison and Swan Electric Light Co., Limited, of Queen-street, London, Section X. of their catalogue. All kinds of telephones and their accessories are described in this section. The private house telephones, called "parlyphones" in this catalogue, deserve to be more widely known. They can be attached at once to an ordinary electric bell circuit, and no extra wires or batteries are required when it is only necessary to ring up from one end. When it is desired to be able to make calls from either end an electric bell mounted on a wooden box containing a dry cell is also provided. Numerous standard forms of magneto-telephones, etc., constructed according to stringent specifications, are described and illustrated. The automatic intercommunication telephones should prove useful in large warehouses.

From Messrs. J. M. Henderson and Co., of Aberdeen, we have received a catalogue of patent compensating derrick cranes, including particulars of the Mitchell-Williams rapid luffing gear. Some of the various advantages claimed for this patent gear are that the load is kept perfectly level while the jib is being luffed; that the jib will remain at any angle, with or without the load, without brakes or locking gear; and that the power required for luffing, which it is claimed is from one-fourth to one-tenth of that usually required, is the same for all loads. This gear should be very useful in loading and unloading contractor's materials, and especially in securing the rapid handling of goods in confined spaces.

Messrs. John Mallin and Co. (West Bromwich) have sent us a specimen piece of their fire-resisting curtain material for theatres, called the "Ajax Uralite Fireproof Curtain." With it is enclosed a note from Mr. A. R. Tozer, chief officer of the Birmingham Fire Brigade, to the effect that a piece of this curtain was subjected for three minutes to the flame of a brazier's blow-pipe, at a heat sufficient to melt brass in 45 seconds, and that the result was "most satisfactory." The framework of the curtain is of 2 in. angle iron, with stiffening pieces across the centre each way. The whole area of the curtain is covered with thin layers of uralite, so arranged that all joints are broken in bond, and firmly riveted together. In addition to this, each sheet, 6 ft. by 3 ft., is, when ready for fixing in position, thickly coated with a special composition which makes them adhere together, so that when completed and allowed to set hard the whole fabric is as one sheet of uralite, ¾ in. thick, stiffened by steel framework. The curtain is raised by the agency of a small electric motor, and rises as soon as the current is switched on. It is lowered by raising a lever which can be worked from the flies, or the stage, or any other point within 100 yds.

The Saxon Portland Cement Co., of Cambridge, have sent us a pamphlet giving an account of their process of making cement, together with a short description of their works. The book contains useful data relative to cement tests generally, as well as to tests made by various experts on the Saxon cement. The average results of tests made at the County Laboratory, Cambridge, shows the main characteristics of the Saxon brand cement to be as follows:—Tensile strength, four days, 400 lb. per sq. in.; tensile strength, seven days, 620 lb. per sq. in.; tensile strength, twenty-eight days, 780 lb. per sq. in.; fineness, 3 per cent. residue, 75 by 75 sieve; sp. gravity, 3·14; steam test, thoroughly sound; contraction or expansion, *nil*.

The Abner Doble Company, of San Francisco, send us their catalogue containing particulars of the Doble tangential ellipsoidal water-wheels, and of the various parts used in their construction. One illustration shows a water-wheel of this type, 10 ft. 5 in. diameter, and weighing over 10,000 lbs. Under 1,531 ft. head, two wheels of this size are driving two 2,000 kw. generators at the de Sabla Power House of the California Gas and Electric Corporation. Illustrations and brief descriptions are also given of a 1,300 horse-power Doble wheel at the works of the Edison Electric Company, Los Angeles, as well as of the wheel buckets, needle regulating nozzles, housing, bearings, and small water motors for laboratory and other purposes.

Messrs. J. Sagar and Co., of Halifax, send us an eight-page illustrated circular descriptive of their surface planing, thicknessing, and moulding machine, with hand or roller feed. Several sizes of this machine are illustrated, and the chief details are fully described, as well as the safety guard made by the same firm.

We have received from the General Electric Company, of Queen Victoria-street, London, the ninth edition of their telephone catalogue. It is thoroughly up to date, and many novelties are illustrated and described. The loud-speaking navy telephones described are new to us, and appear to be well adapted for their purpose. Special telephones, suitable for rifle ranges, electric tramways, and fire-alarm systems, are listed, and we notice that slight alterations have been made in some of the older forms of apparatus. We were interested in the lightning protectors and arresters for telephone lines. Some of them are novel, and should prove effective. There are many things that are worth studying in this catalogue, and everyone interested in telephony should write for one.

The General Electric Company has also sent us the eleventh edition of their switch and fuse board catalogue, which contains also lists of the Robertson glow-lamps and of Nernst lamps. In addition to the usual electrical sundries, water-tight switches are illustrated, including the Admiralty pattern switches and distribution boxes. We have noticed that in some cases reductions in price have been made.

We have received from the Electric and Ordnance Accessories Co., Ltd., of the Stellite Works, Birmingham, a catalogue of the Stellite short-distance telephones and a leaflet entitled "A Short Treatise Telling How." The leaflet describes how it is possible to get better value from your electric-bell system by making it serve as a telephone system as well at a slight extra expense. For 15s. a pair of telephones, with suitable cords, switch, rosette, hanger and bell wire, are provided, which will enable anyone to speak directly from the dining-room to the kitchen. In the catalogue full descriptions are given of the Stellite telephones, and the methods of using them with existing electric bells are fully described.

LEYSIAN MISSION BUILDINGS, CITY-ROAD.—We omitted to mention in our brief description of this building last week that the terra-cotta work was by the Ruabon Coal and Coke Company, Ltd. (Dennis, Ruabon).

Correspondence.

TRAFALGAR-SQUARE AND REGENT-STREET.

SIR,—With reference to the interesting articles which have appeared in your issues of 2nd January and 2nd July, I think that the enclosed letter from Mr. John Nash, which is a report or valuation on some premises in the line of the New Street, may be of interest to your readers. The valuation shows how much care was taken by the architect over a somewhat unimportant matter. The original letter, with others, is in my possession, bearing the date 1817; they are entirely written by the architect himself. The wonder is that he could have found time to enter so fully into details.

W. HILTON NASH.

"THE NEW STREET.

"29, Dover-street.

"27th Dec., 1817.

"DEAR SIR,—I am sure you will not be influenced by the rig-my-roll writing which Mr. Bull has laid before you; I shall therefore not annoy you with contraverting his unfortunate statements, drawn from absurd arguments. I will now only send you my calculation of Ostler's claim. The others you shall have to-morrow.

"You saw the wretched mansion in which he lives and of which he is more an inmate than a householder, not having an upright house from top to bottom. I am of opinion that the extreme value of the house is what he pays, 42*l.* It is well-known that Walker, his landlord, lets his premises at the extreme rent, but the building will speak for itself. He is out of this liable to repairs, and you will, of course, see what they would be if enforced. The house, therefore, as a house is worth nothing, or less than nothing; it is the situation, therefore, gives it a value, as a retail trade, and that situation is certainly of the best kind, but Walker, aware of that, has demanded 42*l.*, which in other streets would not be worth 20*l.*

"I hope you are aware that because a house happens to fall in the line of the New Street, that it must necessarily be worth something; it may, however, be nothing more than the compensation a man ought to receive for the expense of getting another, and this is little more in the present case. Look at the man's stock of turnery. I will venture to say 100*l.* will clear his shop. As a turner he has, I daresay, fixed customers; besides this he carries on a very small carpenter's business; for this, too, he has fixed customers, and, go where he will, he can make boxes and put up a turning lathe. This concern is of the smallest kind, and in my original survey I had put this man's goodwill and moving at 70*l.* If he gets 100*l.* it will, I have no doubt, be more than he ever expected to be worth in his life, and, between man and man, I think he would be most liberally remunerated by 100*l.*

"To go into a minute calculation of this case is ridiculous, because there are no data to go by. The house, the situation, the man, his stock, and his circumstances should be looked upon from a judgment formed on the whole. Did the man ever realise 100*l.* in his whole living there? If he gets 100*l.* it would be clear gain. In a week you will find him in another similar dwelling, working as a box-maker and carpenter, and his wife selling toys or something else.

"Ever, dear sir, faithfully yours,

"JOHN NASH.

"JAMES FIELD, ESQUIRE."

JUMIÈGES ABBEY.

SIR,—The illustration and account of the *Abbaye de Jumièges* are delightsome to read and examine by anyone who knows and loves the building itself. Two points of some interest might be worth adding for the benefit of those who contemplate a visit to the ruins:—(*a*) The interesting fragments in the gatehouse, especially a portion of the tomb of "Les Enervés"; (*b*) the, to me, unique treatment of many of the *round* arches, which have a *central* joint. There is also much to interest in the parish church here (as also at that of Yainville, *en route*), notably a bit of old glass supposed to have been brought here from the Château of Mesnil hard by, where Agnes Sorel died—its subject "Suzanne et les Vieillards," seems to justify the statement.

I fancy that, when capitals were decorated with conventional foliage in colour, it was the intention to leave it at that. Perhaps some learned writer would clear up so interesting a point. Great as was co-operation in old days, it is a doubtful point if the colour decoration man would like to pose as a mere provider of a pattern for the carver to cut away. Where means are limited (and they generally are just now) it would give a chance to adopt this treatment as a new *point de départ*.

E. SWINFEN HARRIS.

STAMFORD LIBRARY COMPETITION.

SIR,—Your issue of July 9 contained a paragraph relative to the Stamford Library Competition, stating that the time for sending in designs had been extended to July 30. Some months ago the Stamford authorities stated in your columns that the conditions of the competition would be sent in due course to any architect depositing 1*l.* 10*s.*, which I forthwith did, and, so far, have received no intimation beyond the receipt for my cheque, until, in your columns of the 9th, I saw that the designs had to be sent in by July 30. I thereupon wrote asking for the conditions, site, plan, etc., and again after a week's interval, to both of which letters I have received no reply.

T. R. BRIDSON.

CEMENT BRICKS.

SIR,—The great advantage of cement bricks is that they can be made anywhere, indoors as well as out-of-doors. They take no brick-yard space, require no brick-kiln, nor any great time to dry or to set, and when they are made they are as good as Woolpit bricks or any spurious imitation thereof. They could be made in a house in Cheapside or Fleet-street if it were not for the terrific rents required, and could be produced to order on a day's notice. Some in-door factories in East London could easily be established, where rents are comparatively low and employment greatly in demand.

WALTER SCARGILL.

CONSTRUCTION OF ICE-HOUSE.

SIR,—Could any of your readers kindly inform me of the cheapest and most efficient mode and construction of a building for the storage and preservation of shiploads of block ice. The building would be situated on a public street, in an exposed position, and would be about 100 ft. by 40 ft. by 9 ft. to the eaves. How should the wall be built, of what thickness, and material (if concrete, please state proportions), and should the roof be circular or flat, and how constructed?

Would vulcanite roofing or granolithic be of any use? I would also like the names of any firms who make this class of work a specialty, and also the number of cubic feet allowed for each ton of ice.

COLD STORAGE.

The Student's Column.

NOTES ON PORTLAND CEMENT:

CHAPTER II. (*continued*).—THE ANALYSIS OF CEMENT MIXTURES.

TO make a good even cement the manufacturer must keep his mixture as near as possible to the same composition. When he has found what proportion of limestone or chalk and clay give the best results, his endeavour should be to keep the "mixing" as nearly as possible to that limit. For this purpose it must be tested at frequent intervals; half-hourly with variable material, or a few times a day when the mixture is not so variable. There are many quick methods of determining the composition of the "mixing," all of which, when carefully carried out, are valuable. When the test is done, say, three times daily, or if there is much lime present not in the state of carbonate, the total clayey matter may be determined. One gramme of the dried raw mixture is treated with 10 ccs. hydrochloric acid and 20 ccs. water, boiled for a few minutes and diluted to about 250 ccs. Ammonia is then added in very slight excess, which will precipitate the silica, iron, and alumina, along with the clay and sand. The precipitate is filtered, washed with hot water till free from chlorine, transferred to a platinum crucible, and ignited. The filtrate contains the lime, magnesia, sulphuric anhydride, etc., a complete separation of which should be occasionally done. There is always some of the lime in the ammonia precipitate, but, with experience in manipulation and care, this need not exceed 0·2 per cent., which is near enough for a practical test. When the test has to be made hourly, the method used must be much more expeditious.

The carbonate of lime may be treated with standard hydrochloric acid in the heat, methyl orange being used as indicator, but the end point is difficult to determine; or it may be decomposed with hydrochloric acid, estimating the loss in weight as carbonic acid (Mohr's apparatus). In the author's opinion there is no more convenient method than by the calcimeter. This essentially consists of a graduated tube for measuring the carbonic acid gas evolved, from which the carbonate of lime is calculated. Fig. 1 is a sketch of an apparatus suitable for this purpose. The cylinder D contains ordinary water, the tubes A and B distilled water, so full that when the water in A stands at zero not more than about 5 ccs. are in B. The *modus operandi* is as follows:—The barometric pressure and the temperature of the water in D are noted. From this data the weight of substance required is obtained. A sample of the raw mixture is dried in an air oven, finely ground, and the necessary quantity weighed out sharply. This is put into the clean dry bottle C. A small tube containing 10 ccs. hydrochloric acid of 1·2 specific gravity is placed in the same bottle, which is connected to the tube A by a rubber tube F, the stopcock E is opened, and the water level brought to the zero mark in A. The stopcock is now closed, and the acid gradually tipped on to the substance, the bottle being well shaken to expel the carbonic acid

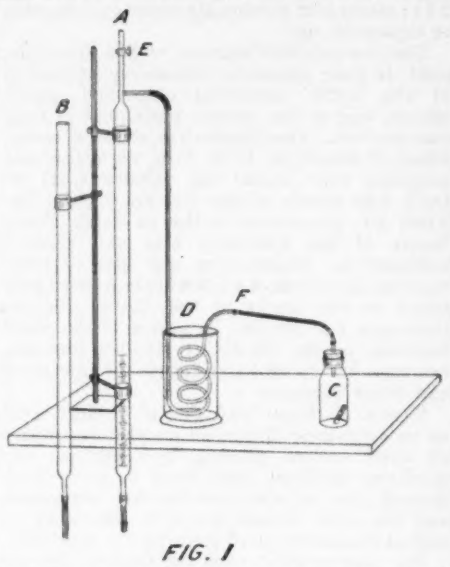

FIG. 1

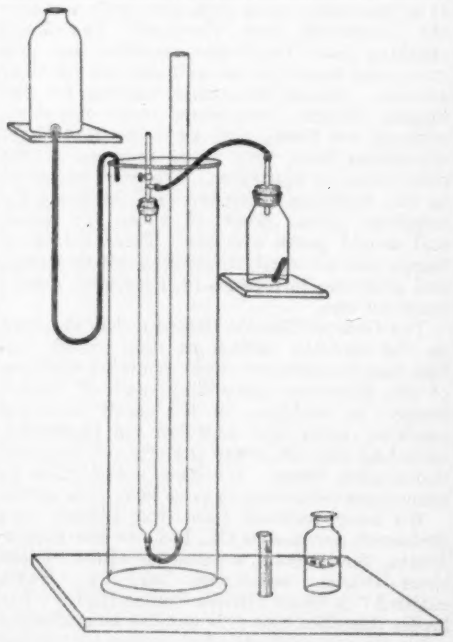

FIG. 2

gas, which is disengaged and passes through a lead worm in D, thus reaching the measuring tube in a cool state. The apparatus is allowed to stand at rest for about three minutes, with the bottle C placed in the jar D. The water level in A and B is adjusted, and the amount of carbonate of lime read on A. This result is low, some of the carbonic acid gas being absorbed by the hydrochloric acid. The correction for absorption being added, the true percentage of carbonate of lime is obtained. Example:—Barometer = 740 mm.; temperature = 16° C. By reference to a table 0·807 grammes is found to be the weight required. The reading on the measuring tube is 72 and 2·7 is the correction for absorption, giving a percentage of 74·7 carbonate of lime. With slight variation in details all calcimeters are the same. The author's objection to them is that currents of cold or hot air blowing on the measuring tube quickly effects the gas volume, so giving erroneous results, sometimes as much as × 3 per cent. To avoid this error a calcimeter was devised by the author. From sketch (fig. 2) it will be seen that the entire gas volume is surrounded by water which is not quickly effected by changes of temperature. The water in the measuring tube is also saturated with carbonic acid gas, as fresh water absorbs its own volume of this gas. The test is carried out in precisely the same way as already described, and can be completed in ten minutes from the time of procuring the sample. Tables of weights of substances to be taken and corrections for absorption are obtained with the calcimeters.

Coke and Coal (*Proximate Valuation*).

The other chief material used by the cement maker is the fuel to burn the raw mixture into clinker. If burned in the rotary kiln coal will be used, and the moisture, volatile matter, ash, and calorific power should be determined.

The calorific value is no criterion of the value of a coal for use in the rotary kiln without knowing the volatile matter, which should be about 35 per cent. These determinations may be carried out in the following manner:—

Moisture.—Powder 2 grammes of the fuel very finely, weigh between two watch glasses, and dry in a water oven. Allow to cool every hour in a dessicator and weigh. Since the weight increases after a time by oxidation, the lowest should be taken. The loss is moisture.

Volatile Matter.—Put 1 gramme of the dry coal in an even layer in a platinum crucible. Cover with the lid and place over a Bunsen flame, so that the results may be comparable. The length of flame and position of the crucible in it should be the same each estimation. So soon as the gases from the fuel cease to burn, continue the heating one minute. Allow the crucible to cool, and weigh without the lid. Loss is volatile matter.

Ash.—Weigh out 0·5 gramme of the dry fuel on a platinum crucible lid, and heat quickly and strongly till all the coke is burned. The residue will be ash. This result will be too high, owing to oxidation, but for the purposes of the cement maker it is sufficient to know how much ash the fuel will yield when burned completely in contact with air. It is very necessary that the ash should be known, as all of it enters into combination with the raw mixture. Thus, if a coke contains 16 per cent. of ash, and 40 per cent. is used to produce one ton of cement clinker, then in every ton of clinker there will be incorporated 1·28 cwts., or 6·4 per cent. fuel ash. If the raw mixture is proportioned so that when burned out of contact with the fuel the lime in the resulting clinker is 66 per cent., then when burned with 40 per cent. of fuel containing 16 per cent. ash, the lime would be $\frac{66 \times 100}{106{\cdot}4} = 62{\cdot}04$ per cent. Now, say the fuel contained 20 per cent. of ash, with the same raw mixture the lime in the clinker would be $\frac{66 \times 100}{108} = 61{\cdot}1$ per cent. Thus it will be seen that if a cement has to be well prepared, the fuel ash entering into its composition must be known as well as the constituents of the other raw materials.

Fire Bricks.

Kiln linings being a very expensive item in the manufacture of cement, the maker should see that he gets the best for the purpose by determining the "fire value." To do this, a gross analysis is made in the same manner as explained for clay, and the "fire value" calculated therefrom as shown in the example.

A fire brick gave on analysis:—

Silica	.. ..	54·38	per cent.
Alumina	.. ..	40·90	,, ,,
Oxide of iron	.. ..	1·21	,, ,,
Lime	.. ..	2·55	,, ,,
Magnesia	.. ..	trace	,, ,,
Alkali	.. ..	nil	,, ,,

54·38 parts silica		contain	28·99	parts oxygen.
40·90 ,,	alumina	,,	19·21	,, ,,
1·21 ,,	oxide of iron	,,	·36	,, ,,
2·55 ,,	lime		·10	,, ,,

The total oxygen in the iron oxide, lime, magnesia, and alkalies is ·46 parts.

Then $\frac{19{\cdot}2}{46} = 41{\cdot}73$ and $\frac{28{\cdot}99}{19{\cdot}2} = 1{\cdot}51$.

The fire value is $\frac{41{\cdot}73}{1{\cdot}51} = 27{\cdot}8$.

In valuing the raw material for cement making it should be borne in mind that only silica, alumina, and lime are the necessary compounds. Any other ingredients shown by analysis are impurities, some of which may be perfectly harmless, even in large quantities, while others may produce a cement of poor quality, varying in proportion to the quantity present.

Some shales contain large quantities of sulphide of iron, and are perfectly useless. Magnesia and sulphate of lime should not be present in quantity, although a large part of the sulphuric anhydride escapes as alkaline sulphate in the waste gases.

A clay containing a large percentage of insoluble silica is not good. The higher the percentage of soluble silica the better the clay, as chemical combination in the burning is more effectual where the silica exists in combination than when present in the free state as sand. A clay having too much alumina should be avoided, as it produces a quick setting and weak cement with a dirty brown colour. Iron also produces an objectionable colour. The effect of magnesia and sulphates will be discussed in another chapter.

In the tables below are some typical analyses of cement-making materials.

LIMESTONES.

	Sussex Chalk.	Grey Chalk.	Crystalline Limestone.	Limestone from Lehigh Valley, U.S.A.	Blue Lias Limestone.
Moisture	15·29	3·05	·25	—	1·60
Carbonate of lime	82·39	87·5	99·08	—	84.55
Carbonate of magnesia	1·56	1·0	—	—	—
Silicious matter	·22	8·45	·64	—	11·15
Iron and alumina	trace			—	2·33
After Drying.					
Carbonate of lime	98·53	90·90	82·05	84·45	—
Carbonate of magnesia	1·71	·65	—	6·27	—
Silica	·24	8·38	9·92	8·48	—
Iron and alumina			3·77	·75	—
Lime			·41	—	—
Magnesia			2·02	—	—
Ferrous carbonate	trace		1·68	—	—

MARLS.

Sol. in Acid.	1	2
Oxide of iron	2·62	—
Carbonate of lime	50·31	76·16
Carbonate of magnesia	2·21	·73
Sulphate of lime	trace	trace
Water and organic matter	10·09	2·27
Silicious Matter.		
Silica	21·91	17·83
Oxides of iron and alumina	9·46	2·85
Lime	1·48	1·0
Magnesia	·53	—
Alkali	1·39	—

LIAS SHALE.

	1	2	Cement rock from Lehigh Valley, U.S.A.
Moisture	10·60	12·47	4·90
Silica	52·50	34·96	16·55
Alumina	29·15	20·32	3·55
Oxide of iron		3·16	
Carbonate of lime	3·64	23·64	—
Alkalies	4·0	5·43	—
Lime	—	—	40·55
Magnesia	—	—	3·35
Carbonic acid	—	—	30·46

CLAYS.

	Gault Clay.	London Clay.	River Mud.
Carbonic acid	11·38	—	—
Water and organic matter	6·69	3·12	7·45
Soluble silica	23·81	36·20	22·74
Insoluble silica	18·43	20·70	36·56
Alumina	15·96	22·72	21·21
Oxide of iron	5·74	5·67	
Lime	14·69	—	1·40
Carbonate of lime	—	4·05	—
Magnesia	1·47	—	1·26
Carbonate of magnesia	—	7·45	—
Sulphuric anhydride	1·30	*nil*	4·27
Alkalies	1·02	—	5·11
Sulphide of iron	—	—	trace

OBITUARY.

MR. RAWLE—The death, on Monday, July 11, is announced of Mr. William Harry Rawle, of Manchester. Mr. Rawle was in his fiftieth year, and was formerly a partner in the firm of Messrs. Heathcote and Rawle. He was architect of the new Roman Catholic Church of St. Mary, having a capacity for 600 persons, with presbytery, at Eccles, near Manchester, designed after the XIIIth century style, 1897-8; the conventual chapel in Victoria-park, Manchester, for the Sisters of Charity of St. Vincent de Paul, erected six years ago; and the St. Mary's-road school at Newton Heath, built in 1901 for the School Board of Manchester.

GENERAL BUILDING NEWS.

LIVERPOOL CATHEDRAL.—King Edward and Queen Alexandra visited Liverpool on the 19th inst, and there His Majesty laid the foundation-stone of the new cathedral, which is to be built on St. James's Mount. The first stage of the building work—the erection of the cathedral nave, together with the site and the foundation-stone expenses—is estimated to cost a quarter of a million. The architect is Mr. Gilbert Scott, with whom is associated Mr. George F. Bodley, R.A. Illustrations of the building have appeared in the *Builder*.

NEW CHURCH, GREYSTONES, NEAR DUBLIN.—Greystones Catholic Church, when complete, will be 114 ft. long by 66 ft. across transepts, and 28 ft. across nave. The style is Romanesque, and the building consists of nave, two transepts, chancel with side chapels, and circular apse end. There are at present built the apse, chancel, side chapels, transepts, and about 15 ft. of the nave. But the foundations for the whole structure, including tower, are already laid, and about 40 ft. of a temporary wooden structure erected between the foundations, leaving room for the main building to be completed outside and over it. The walls of the transepts are carried on three arches, supported on Aberdeen granite shafts, with carved caps and bases. All arches and window jambs and recesses are deeply moulded. The chancel, transepts, and passages are tiled. The windows are glazed with tinted lead lights, supplied by Messrs. W. Martin and Son. The contractors were Messrs. Kinlen Bros., of Greystones, and the architects, Messrs. Wm. H. Byrne and Son, Dublin. The whole structure, at present, will accommodate about 700 persons, and when finished 850.

MISSION CHURCH, FORNCETT, NORFOLK.—The foundation-stone has just been laid of the mission church, to be erected at Forncett End. The building will consist, when completed, of a nave, to seat 110 persons, chancel, vestry, and western porch. At the present time it is proposed to erect only the nave and porch. The walls are to be built of red brick with Cossey brick windows, mouldings, strings, and buttresses. The upper portion of the walls will be finished with rough cast stucco. The nave will consist of three bays, with three light windows in each, on both the north and south sides, and the windows will be treated with Cathedral glazing. The roof will be of open construction. The floor of the porch will be laid with 4-in. red Staffordshire tiles, with appropriate border. The roof of the nave is to be covered with permanent green slates, and the porch with best Broseley tiles. Messrs. James and Chellis Humphreys, of Forncett, have obtained the contract for the work, and are carrying it out from the plans and specification, and under the personal supervision, of Mr. Arthur J. Lacey, architect and Diocesan Surveyor, of Norwich.

ST. LUKE'S CHURCH, NEWPORT.—The new Church of St. Luke, Bridge-street, Newport, Mon., was dedicated recently by the Bishop of Llandaff. The church, which has been built upon the site of the old chapel-of-ease, in the parish of St. Woolos, extends from Bridge-street to the frontage of Railway-street, and has a length of 142 ft. and a breadth of 60 ft. The church consists of nave and side aisles, chancel, morning chapel, organ chamber, and two large vestries for the clergy and the choir. The architects are Messrs. Habershon and Fawckner, of Newport and Cardiff. The work has been carried out by the contractors, Messrs. A. S. Morgan and Co., of Newport. The contract amounted to 4,300*l*. The walls are carried up in red local stone, with freestone dressings. The west elevation, facing Bridge-street, is surmounted by a bell turret, with a new bell, the top of the cross being 70 ft. above the ground. The church accommodates about 800, including the choir stalls, which provide for fifty. The organ of the old church has been overhauled and rebuilt by Messrs. Vowles, of Bristol. The font of the old church has also been fixed in the new building at the right of the west door.

CHURCH, GREENHILL, HARROW.—Lady Ebury laid the dedication-stone on Saturday last week of the Church of St. John the Baptist, Greenhill, Harrow. The new building is from the designs of Mr. J. S. Alder, and is built of stone. The seating accommodation in the old structure was 470; in the new building it will be 900.

PROBUS CHURCH, CORNWALL.—Some alterations and additions are being made to this ancient church, under the direction of Messrs. St. Aubyn and Wadling, architects, of London. The work embraces the conversion of the north chancel aisle into a morning chapel, decorated with carved oak panelling. The five-light east window will be filled with stained glass, and there will be a new carved oak reredos and altar immediately beneath. The present pulpit, which is of Caen stone, will be removed and presented to St. Sithney Church, at St. Sithney, and an oak one with a carved representation of the Sermon on the Mount will be placed upon the opposite side to that the old one now stands upon. The organ is to be moved from its present position in the north chancel aisle to a new organ chamber south of the south chancel aisle. Mr. G. Miners, of Marazion, is the general contractor, and the carving is being executed by Messrs. Harry Hems and Sons, of Exeter.

BAPTIST CHURCH, STOCKSFIELD, NORTHUMBERLAND.—A new Baptist church is to be erected at Painshawfield, Stocksfield. The chapel is to be built to plans by Messrs. W. Dixon and Son, architects, Newcastle, and will provide sitting accommodation for 200, and is expected to cost, inclusive of site, between 1,000*l*. and 1,100*l*.

PRESBYTERIAN CHURCH, CROYDON.—The foundation-stone of the new Presbyterian church, which is to be erected in South Croydon, was laid recently. The building will provide accommodation for 550 people, and the cost will be 6,683*l*. Mr. Charles Henman, architect, has prepared the plans, and the contractors are Messrs. J. Smith and Son.

CONGREGATIONAL CHURCH, SHIREBROOK, DERBYSHIRE.—The foundation-stones of a new Congregational church were laid on the 6th inst. at Shirebrook. The new church will seat about 350 persons, and the end gallery, when added, will accommodate from 100 to 150 more. The heating will be by means of low-pressure hot water. Externally the building will be faced with Rushley stone rock, with Cox bench stone dressings, and the rear portions of wall will be faced with Leicestershire sand stock bricks. The roof will be covered with American sea-green slates, and the small spire with lead. The contract for the church (without sittings) is about 1,550*l*. The architect for the scheme is Mr. C. Nelson Holloway, Nottingham, the contractors being Messrs. Lee and Kirk, of Chesterfield and Alfreton.

UNITED METHODIST FREE CHURCH AND SCHOOLS, SEVEN KINGS.—The foundation-stone of these buildings was laid on the 16th inst. The portion of the building now being erected embraces the church nave and temporary apse, also a square tower, with open traceried parapet, and surmounted by a spire and finial vane rising to a height of 91 ft.; also main schoolroom, 51 ft. by 40 ft., together with superintendent's room, etc., and the usual conveniences. The contract amount for this portion is 3,488*l*., and 400 persons in a mixed congregation will be accommodated. The facings are of red brick, the dressing in Bath stone. The architects, whose designs were selected in a recent competition, are Messrs. George Baines and R. Palmer Baines, Clement's-inn, Strand, London, W.C. The contract is let to Mr. C. North, of Stratford.

BAPTIST CHURCH AND SCHOOLS, SWINDON.—Baptist church and schools have been erected in the Cricklade-road, Gorse-hill, Swindon. The church, which will accommodate about 400 persons, is built of red bricks, with St. Aldhelm Bath stone dressings, and has an open pitch-pine roof, covered with green slates. The baptistry is sunk in the chancel floor. The schools are in the rear of the church, and have accommodation for about

300 children. A kitchen is attached, and the main portion of the schools is divided up by folding partitions, so that the schools may be converted into an assembly room. The cost of the whole of the buildings, including seating and furniture, has been about 3,300*l*. The work has been carried out by Mr. A. J. Colborne (Swindon), under the supervision of the architect, Mr. George A. Lansdown (London), whose designs were accepted in competition.

OFFICES, SUNDERLAND.—New offices for the River Wear Commissioners are to be built upon the site of the old Sunderland Post Office. The architects are Messrs. J. Henderson and Hall, of Sunderland.

WESLEYAN CHAPEL, BONBY LODGE, HULL.—The memorial-stone of the Bonby Lodge new Wesleyan Chapel was laid recently. The architect is Mr. Gibson, of Stalybridge, and Messrs. W. King and Son are the bricklayers, Messrs. King and Son stone masons, and Mr. J. Stamp joiner.

SYNAGOGUE, NEW CROSS.—The laying of the foundation-stone of the South-east London Associated Synagogue took place recently. The new synagogue will be Romanesque in style, and is being erected from the design of Mr. Delissa Joseph. The exterior will be of red brick with stone dressings, and there will be a complete system of electric lighting. The total cost is estimated at 5,000*l*.

COUNCIL SCHOOLS, BRIMINGTON, DERBYSHIRE.—The new council schools at Brimington, which were opened on the 9th inst., have been erected from the designs of Mr. W. Cecil Jackson, architect, of Chesterfield. The contract for the work has been carried out by Mr. W. Forest, Chesterfield, the heating apparatus being installed by Mr. W. Huslam, Harstoft. The cost has been 4,000*l*.

NATIONAL NAUTICAL SCHOOL, PORTISHEAD, BRISTOL.—Her Royal Highness Princess Henry of Battenberg laid the foundation-stone last week of the National Nautical School, which is to be erected at Portishead. The site is at the end of the Nore Road, close to the channel, and near the Nore Lighthouse, and it consists of about 15 acres of land belonging to the Corporation of Bristol. The building has been designed by Mr. Edward Gabriel, of London, and the contract has been let to Messrs. W. Cowlin and Sons, of Bristol, and the scheme will involve an expenditure of about 30,000*l*. The main building consists of two wings divided by a central tower. It will have a frontage of 382 ft., and will rise 45 ft. high from the parade ground. Owing to the rapid fall in the site there will be a basement extending the whole length of the building, and 40 ft. in width. The space thus provided will be used as carpenters', tailors', shoemakers', and other shops, and for stores, laundry, and heating apparatus. There will also be a band-room and instruments' store. The school will have three stories of brickwork, finished with a facing of white rough-cast, with red brick plinth, and red brick Ionic pilasters between the windows. The roof will be covered with red Bridgwater tiles. Under the tower in the central building will be the main entrance, surmounted with carved figures of Neptune and Britannia. The tower, which is to contain a clock 90 ft. high, will be finished with a wood and copper flèche. The small towers at the corner of each main block will contain staircases. The two upper floors are to be used as dormitories, and from each dormitory there will be two staircases for use in case of emergency, the steps of solid balks of timber. The entrances for the boys will be on each side of the central building. The ground floor of the west block will be used for a mess-room for the boys, officers' mess-room, with kitchen, scullery, and store-rooms adjoining. At the extreme end of the west block is to be the chief officer's house and rooms for resident schoolmaster. At the rear of this block there will be a bay for sick boys, for which hereafter a separate cottage hospital will be substituted when the necessary funds are available. The great floor of the east block is to be devoted to schoolroom and class-rooms, library, and teachers'-room. At the extreme east of this building will be the residence of the captain-superintendent, which will be connected with the main building, and from which house there will be supervision of the parade ground and playing fields. The central building is to contain committee-room on one side of the main entrance, and offices for the captain-superintendent on the other. On the upper floors of this building there are to be spare cabins for officers and any old boys who may hereafter visit the institution. Each large dormitory will have four officers' cabins, and inspection windows for efficient supervision. The floors of the dormitories are to be of solid balks of timber, tongued together, and the space will be made to resemble the deck of a vessel as much as possible. The lads will sleep in hammocks, as on board ship. The bathrooms and lavatories will adjoin the dormitories, but cut off by means of cross-ventilated lobbies. Passing through the hall from the main entrance, access will be gained to the gymnasium, which will be at the rear of the central building. The dimensions of the gymnasium will be 84 ft. by 50 ft., and 20 ft. high in the springing of the roof. It will be used not only for physical exercise, but also for meetings and entertainments, and for services when the weather may prevent the boys attending church. The buildings are to be warmed by hot water on the low-pressure system. The heating and hot water-supply apparatus is to be erected by Messrs. James Crispin and Sons, of Bristol. The granolithic paving for the courtyard and staircases is being executed by Messrs. W. B. Wilkinson and Co. From the parade ground access will be made by broad flights of steps to a lower terrace. The land between this and the channel is to be laid out as playing fields. There will also be a jetty and boathouse on the foreshore. Drainage is to be by means of a septic tank and a filter, of the type designed by Mr. Wallis Stoddart, the effluent flowing into the sea. Rain water from the roofs will be collected in a large central tank, and used to supply boilers and the laundry. Accommodation will be provided in the school for from 350 to 400 boys.

INFANT SCHOOL, ABERCYNON.—The Mountain Ash Education Authority recently opened the new Abertaf School for infants at Greenfield. The school, which cost, including site, 4,243*l*., is built to accommodate 250 infants, the plans being prepared by Mr. A. O. Evans, architect, Pontypridd, and the building erected by Messrs. Jenkin and Sons, Porth.

SCHOOLS, ABERBARGOED.—The opening ceremony of Aberbargoed schools took place recently. The new school provides accommodation at present for 200 boys and girls, and 160 infants, and is planned with a view to future extensions for 150 boys and girls, and 100 infants. There are four class-rooms in the mixed department, opening on to a central hall. The infants' department has for the present three class-rooms, opening on to a central hall. The four central class-rooms are divided by means of a sliding swivel partition, which allows of these rooms being thrown open into two large rooms if needed. The contractors were Messrs. W. Wiliams and Sons, of New Tredegar, and the cost was a little over 6,500*l*. The plans were prepared by the Board's Architects, Messrs. James and Morgan, Cardiff.

NEW MISSION HALL, PRESTON.—The opening of St. Mark's Mission Hall, Preston, took place on the 9th inst. The building has been erected by Mr. George Gardner, builder, Preston, from the designs of Messrs. Swindells and Rawcliffe, architects, Fishergate, at a cost of over 1,100*l*.

PROPOSED PUBLIC BATHS, HANDSWORTH, BIRMINGHAM.—A site has been acquired in Grove-lane, Handsworth, by the District Council for the purpose of erecting new public baths. The building will comprise two swimming baths, the first-class bath measuring 100 ft. by 35 ft., and the second-class, 100 ft. by 30 ft. There will also be Turkish and slipper baths. The plans for the work have been prepared by Mr. John Osborne, of Birmingham, and the cost will be 18,000*l*.

HOTEL DORNOCH, N.B.—A new hotel has been erected by the Highland Railway Company at Dornoch. The external walls of the new building are rough cast in Portland cement, use being also made of stone dressings. Half-timbered work is introduced into the gable tops; the main portion of the roof is slated, with the use of red tiles in certain portions, red tile ridges and red terra-cotta chimney pots. Internally the building is finished in pitch-pine, the walls and ceilings of the principal apartments being panelled in that wood. The architects of the building were Messrs. Cameron and Burnett, Inverness, and the work was carried out by the following contractors:—Mason work, Messrs. Wm. Alexander and Co., Inverness; iron work, The Rose-street Foundry Company, Ltd., Inverness; carpenter, Mr. James Robertson, Forres; plumber, Mr. William Anderson, Glasgow; slater, Mr. John Reid, Inverness; asphalte, Messrs. W. G. Walker and Sons, Edinburgh; plaster and tile, Mr. George Gray, Elgin; painter and glazier, Messrs. J. Tullock and Co., Inverness; electric light, Messrs. Wylie and Lochhead, Glasgow; lift, Messrs. A. and P. Steven, Glasgow.

NEW INSURANCE OFFICE, NORWICH.—A new head office has been erected for the Norwich Union Life Insurance Society in Surrey-street, Norwich. The building is stone-fronted, and is recessed from the street, having a rusticated basement in the central portion, with six stone columns, each about 30 ft. in height. These columns support a pedimented entablature. There are flanking blocks on either side, the chief features in which are balconies and detached columned windows, and also, at the extreme ends, pavilions running out to the street front. These pavilions are recessed for two heroic-sized statues in stone, under stone canopies. There is a central hall about 70 ft. square, and forty marble monolith columns are used in its construction. The whole of the walls, door linings, etc., are finished in marble. The staircase is also of marble, and the marble walls are continued on the first floor and along the corridor which gives access to the board and committee rooms. The chief of the corridor floors is also laid with marble pavements. The central hall is covered with a dome enriched with colour and gold. The architects are Messrs. George J. and F. W. Skipper, of Norwich.

THE CARNEGIE LIBRARY AT GAINSBOROUGH.—For a public library at Gainsborough, Mr. Andrew Carnegie has offered 4,000*l*. The plans have been prepared by Mr. H. G. Gamble, of Lincoln, and the tender of Messrs. Sprakes and Son, of Doncaster, has been accepted at 3,100*l*. The site of the library is the square fronting the Old Hall.

LIBRARY, LOWESTOFT.—The foundation-stone of a free library was laid at Lowestoft recently by the Mayoress (Mrs. H. Bournes Walker). The site of the new building is in Clapham-road, adjoining the Technical Schools. The architect is Mr. G. W. Leighton, of Ipswich, whose plans were selected in competition by Mr. J. Bootle, F.R.I.B.A., of Yarmouth. The main entrance is by way of the tower porch, the news-room being the first apartment reached. A corridor gives access to the borrowers' lobby. A marble staircase, lighted by a dome, ascends to the first floor, where, overlooking Clapham-road, is the magazine-room, which has an open timber roof. At the other end of this floor is the reference library. This room will be lighted by a central dome, as well as by side windows. There are other staff rooms and offices, and retiring-rooms. The walls of most of the rooms, corridors, and staircase are to have a dado of Dutch enamelled tiles.

THE WORKING MEN'S COLLEGE, ST. PANCRAS.—The Prince of Wales, accompanied by the Princess of Wales, paid a visit to St. Pancras on Saturday last to lay the foundation-stone of the new buildings, in Crowndale-road, of the Working Men's College. The buildings will occupy a site at the corner of Crowndale-road and Camden-street, not far from the Cobden statue, in the Hampstead-road. Mr. W. D. Caröe, architect to the Ecclesiastical Commissioners, is the architect for the new college. His plans show a hall, to accommodate 250 persons, offices for administrative purposes, with common-rooms, clubrooms, and gymnasium for the students, a library, fitted for 10,000 books, museum, and a number of class-rooms. There are added electricity and chemistry laboratories. Altogether there is teaching space provided for 700 students.

POLICE STATION, CITY.—The Lord Mayor opened the new police station at Moor-lane, Fore-street, recently. The work has been carried out by Mr. Arthur Porter, of Tottenham, from the designs of Mr. A. Murray, the City Surveyor. The new structure takes the place of an old police station on a smaller area, and gives accommodation for sixty-seven single men to reside on the premises instead of thirty-three as formerly.

ANCOATS HOSPITAL CONVALESCENT HOME, SANDLEBRIDGE.—This building is situated on the road from Soss Moss to Mobberley, turning to the west from Alderley Edge and Astle-road past Warford Hall. The main building faces nearly due south, and has projecting wings at the ends. These are connected to sunhouses by covered ways which form the eastern and western sides of the forecourt, and lead out of the day-rooms for men and women as places for walking and sitting in in wet weather. There are separate entrances to and from the grounds, with day-rooms, dormitories, staircases, and sanitary arrangements, the latter cut off with intercepting lobbies. There are a few small bedrooms for special cases on either side. The dining-hall is in the centre and common to both sides of the house, and the kitchens are to the north of the dining-hall, connected by a covered way to the outdoor buildings. These surround a kitchen court or quadrangle, open on one side, with flagged walks and grass. The buildings have been erected under the supervision of the architects, Messrs. Thomas Worthington and Percy S. Worthington, of Manchester.

NEW WING, RICHMOND HOSPITAL.—The new wing of the Royal Richmond Hospital, constructed as an out-patients' and ophthalmic department, was opened on the 8th inst. by the Duchess of Albany. The new out-patients' department building, erected to the designs of Mr. Frank Brewer, architect, is separated from the main hospital, and fronts to the Shaftesbury-road. The building is approached by a flight of steps, and has a wide entrance with vestibule, enclosed by a polished oak

screen and folding doors. Next the vestibule is a hall with mosaic paving, and on the right is the waiting hall, with open-timbered roof and lantern light. This hall is divided into two by a movable partition, thus giving a separate waiting-room for male and female patients. The hall is paved with polished oak block flooring, and the walls are lined with Doulton ware. The woodwork is stained green and varnished. There is a suite of four consulting rooms in the rear of the outer hall. The dispensary, which is on the left of the entrance-hall, has been fitted up by Messrs. Maw and Son. Below the dispensary are the dispensers' stores, approached by a side entrance. The first floor, which is approached by a stone staircase from the entrance-hall, is to be used for ophthalmic patients. The heating of the building is by hot water with radiators, and by Boyd's air-chamber stoves. The hot water heating has been carried out by Messrs. Jeffreys. The chimney pieces, wall linings, decorative panels, etc., were carried out by Messrs. Doulton and Co. There is electric lighting throughout. The builders were Messrs. S. N. Soole and Sons, of Richmond.

LIBRARY, TINSLEY, YORKSHIRE.—The corner-stone of a public library has just been laid at Tinsley. The new library will stand at the end of Bawtry-road. On the ground floor will be a porch, entrance-hall, and staircase, a reading-room, 30 ft. by 18 ft., a lending library, 15 ft. 6 in. by 15 ft., and hall for applicants for books. The first floor will be provided with a ladies' reading-room, reference library, and a spare room for stores, etc. In the basement there will be a hot-water apparatus for heating the building, and on the ground and first floors there will be lavatory and other accommodation for the visitors. The building is in the Renaissance style. It will be faced with local pressed bricks and Grenoside stone dressing. The architects are Messrs. Holmes and Watson, Sheffield, and the contract for the building, which amounts to 1,276*l.* 16*s.* 8*d.*, has been let to Messrs. Gray and Sons, builders, Tinsley.

PRINTING AND PUBLISHING PREMISES, SOUTHAMPTON.—New premises for the proprietors of the *Hampshire Advertiser*, *Hampshire Independent*, and *Southern Daily Echo* are to be erected Above Bar from the plans of Mr. Wm. Burrough Hill.

NEW CHURCH, FISHPONDS, BRISTOL.—On the 17th inst. the foundation-stone was laid of All Saints' Church, Fishponds, the eastern portion of which is now to be carried out, and which consists of a chancel, south morning chapel, and north choir vestry (with organ chamber above), with a clergy vestry on its eastern side. One bay of the nave and aisles is also to be erected. The style adopted is XIVth century Gothic. The walls are to be of rock-faced Pennant stone, with Bath stone dressings, the arcades having clustered shafts of rubbed Pennant stone, and those to support principals will be of polished marble. The roofs will be covered with brindled Broseley tiles. The architects are Messrs. Lingen Barker and Son, of London, Bristol, and Hereford, and the builders Messrs. Clark and Sons, of Fishponds.

STAINED GLASS AND DECORATION.

STAINED GLASS WINDOW, WANDSWORTH.—The unveiling of the new stained-glass north-west window in St. Stephen's Church, Wandsworth, took place recently. The work has been designed and executed by Messrs. Jones and Willis, of London.

WINDOW, ST. JOHN'S CHURCH, HOXTON.—The Bishop of Ripon unveiled on Saturday last a memorial-window, placed by relatives and friends in St. John's Church, Hoxton, to the memory of the late Dean Farrar. The new window, designed by Mr. J. A. Reeve, who was the architect of the restored church, has been executed by Messrs. Campbell and Christmas, of West Brompton, and represents Christ seated in glory as seen by St. John in his vision at Patmos. The scheme of colouring is executed to harmonise with the decoration of the church, the subject completing the representation of the vision of St. John.

APPOINTMENTS.

DERBY.—A meeting of the Derby Education Committee was held a few days ago for the purpose of appointing a building surveyor, an entirely new office rendered necessary by the Education Act. The commencing salary is 300*l.* a year. There were 316 applicants, and four of these attended the Committee's meeting. They were Messrs. G. C. Copestick (in the office of the County Surveyor at Derby), W. Percival (Longton), J. S. Walker (Liverpool), and G. H. Widdows (Derby). Mr. Widdows secured the appointment. The successful candidate has qualified for associateship of the Royal Institute of British Architects, and has been in the service of the Derby Corporation for some years.

BOLTON.—Mr. D. Campbell has been appointed to the position of Architect and Buildings Inspector to the Education Committee.

DEVON COUNTY EDUCATION COMMITTEE.—This Committee have made the following appointments on the Architect's staff:—Chief assistant, J. Sidney (York); clerks of works, W. J. Davies (Hereford), R. J. Mathews (Penarth); draughtsmen, H. T. A. Halestrap (London), J. G. Hinton (Lancaster).

APPOINTMENT OF SANITARY OFFICERS.—The Local Government Board has sanctioned the appointment of the undermentioned sanitary inspectors:—Lewisham—Miss Irene Whitworth; St. Pancras—Mr. G. W. Adkins; Southwark—Miss M. R. Burrows and Miss H. M. E. Blackwell; Woolwich—Miss A. M. Middlebrook.

SANITARY AND ENGINEERING NEWS.

THE SANITARY INSTITUTE.—At an examination in Practical Sanitary Science, held at Liverpool on July 15 and 16, ten candidates presented themselves, and the following five candidates were awarded certificates:—A. Brook, Linthwaite; H. W. Gartside, Rochdale; C. B. Goodyer, Manchester; A. Reoch, West Norwood; and E. Ryder, Levenshulme.

FOREIGN.

FRANCE.—M. Mercié's monument to Alfred de Musset, which was exhibited in the last Salon, is to be erected outside the Théâtre Français.——It is understood that M. Carolus-Duran will succeed M. Guillaume as Director of the French School at Rome.——The churches of Saint Sulpice, St. Bernard, and St. Etiènne du Mont are shortly to undergo extensive repairs and restorations.——The General Council of the Seine Department has voted 3,700,000 francs for the rebuilding of the bridges of Notre Dame, de la Tournelle, and l'Archevèché, at Paris.——M. Coutan and M. Verlet have been commissioned by the Government to produce two large sculpture groups symbolising "Le Terre" and "l'Eau" for the decoration of the park of St. Cloud. MM. Sicard, Paul Gasq, Hector Lemaire, and Mdme. Syamour are to execute the "Heurs du Jour," and MM. Gustave Michel, Larche, Desbois, and Lefebvre are to execute "Les Quatre Saisons," all for the park of St. Cloud.——The Municipal Council of Paris have purchased the estate of Bagatelle at a price of six and a half million francs, to add it to the Bois de Boulogne.——New school buildings (*groupes scolaires*) have been erected at Puteaux, from the designs of M. Desestre; at Issy-les-Moulineaux, from the plans of M. Delaire; and at Asnières, from the designs of M. Ricadat.——A monument to the memory of Augusta Holmes, the musician, by M. Caillard, has been erected in the cemetery at Versailles. It consists of a stele with a portrait medallion, surmounted by a figure of a muse draped in mourning, and leaning on a lyre.——The Municipal Council of Brest have resolved on the erection of a Bourse du Travail, at a cost of 100,000 francs.——The death is announced at Beyrouth, at the age of eighty-three, of a very learned archæologist, M. Paul de Saint-Aignan, of the Franciscan order. He was a member of the Institut, to the proceedings of which he contributed numerous papers on numismatics and on Oriental archæology.

GERMANY.—The third exhibition of Industries and Arts at Dresden will take place in 1906; the preparations are under the management of the architect, Herr W. Lossow.——A sinking in the new Maxmillian bridge at Munich was observed last month; the matter is being thoroughly investigated.——The sum of 2,500,000 francs is to be expended on extensive restoration at the cathedral at Cologne.——A girls' school is to be built at Freiburg, from the designs of the architect, Herr Leon Hertling; the building is to be in Early Renaissance style.

AUSTRIA.—The foundation-stone of the new hospital at Vienna was laid on June 21.——The sculptor, Alfonso Canciani, is at work on a statue of the Empress Elizabeth, to be erected at Pola.——The church at Oberloitsch is being enlarged under the direction of the architect, Herr Ferdinand Trummler.——The fountain erected in Vienna in commemmoration of the golden wedding of the Archduke and Archduchess Rainer was unveiled on July 5; the work has been carried out by the sculptor, Herr Kauffungen.——The statue of the painter Hans Canon, by Professor Wevr, is completed, and will be set up in the Park at Vienna; the figure is in bronze and life-size.

SWITZERLAND.—Herr Karl Kochlin, of Basel, has been appointed director of the Swiss Confederal Railway, in place of the late Herr W. Hensler.——The new town hall, at Basel, by the architect, Herr E. Vischer, was opened on June 23.——When cleaning the Dominican Church, at Bern, some interesting frescoes were discovered, among others one representing the Day of Judgment, and several symbols and coats of arms.

THE ST. LOUIS EXHIBITION.—There seems to be, as yet, very little interest taken in the St. Louis Fair, if we may judge by the paucity of information concerning it which is to be found in the daily papers, a scarcity so marked as to cause one to suspect that the authorities may have done something to lead the newspaper managers to feel that it is just as well to let the affair pass as merely a local matter. This attitude would be very unfortunate for the financial outcome, but it is not the only misfortune that already attaches to the Fair. The wrecking of a building by a mob was not exactly a good advertisement, and the recent order that the Exposition guards shall arm themselves with slung-shots is another warning that visitors to St. Louis this summer may expect exciting experiences before they get away from the town. Moreover, there have already occurred two or three fires in the smaller buildings within the grounds, fires, fortunately, that the excellent fire-fighting arrangements prevented from attaining dangerous proportions.—*American Architect.*

ITALY.—The Municipality of Spezia have voted a sum of 400*l.*, to be assigned as a premium to the winner of an international competition, who presents the best drainage scheme for that city and suburbs. The competition will be open until December 31, 1905, on which date it will be finally closed, and foreign architects, engineers, and doctors are to be allowed to compete. A commission will be appointed in due course by the Municipality to examine the various plans and award the prize. Inquiries with regard to the competition should be addressed to Il Signor Sindaco, Spezia, Italy.——A despatch received through the Foreign Office from H.M. Ambassador at Rome reports that a Bill providing for the construction of the Apulian aqueduct by the State has been submitted to the Italian Chamber of Deputies, and been favourably received. The original plan has undergone certain modifications in the Bill now presented to Parliament, which only concerns the construction of the aqueduct, at a cost of five millions sterling, to be provided by gradually increasing assignments spread over the budgets of the next twenty years. The upkeep and working of the aqueduct will form the subject of a separate Bill. A clause has been inserted authorising the Government, within a period of eighteen months from the publication of the new law, if it is agreed to by Parliament, to hand over the construction and working of the aqueduct to private enterprise under the conditions laid down in the law of June 25, 1902. If, therefore, as appears probable, the new Bill should, with certain modifications, be adopted, the participation of foreign capital will not be necessarily excluded.

ROUMANIA.—PRIZES FOR ARCHITECTURAL DESIGNS.—The Roumanian Minister of Public Worship and Education has invited designs for the construction of a cathedral at Galatz, premiums of 160*l.*, 120*l.*, and 60*l.* being offered for the three best designs. The competition will be closed on August 25.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. E. F. M. Elms, architect, having purchased from the Trustee in Bankruptcy of his late partner, Mr. W. H. Arber, his share in the practice of architects and surveyors formerly carried on by Mr. Arber and himself in partnership, under the style of "J. T. Wimperis and Arber," has arranged to take into partnership Mr. Sydney Jupp, who has been for many years identified with the business, and the practice will, for the future, be carried on by them, at 25, Sackville-street, W., under the style of "Elms and Jupp."——Messrs Killer Bros., the proprietors of the Hopton Wood stone quarries, at Middleton, have incorporated their business as a limited liability company. The business was founded by the father of the present senior member of the firm about seventy years ago.

CHURCH OF ST. PETER, BETHNAL GREEN.—At a sitting of the Consistory Court in St. Paul's, on June 30, the Chancellor of the Diocese of London consented to grant a faculty to the vicar and churchwardens for the erection of a new vestry, to be 15 ft. by 11 ft., upon a portion of the disused churchyard, and abutting upon the present

vestry, which is quite inadequate for its purpose. No interments have been made in the ground chosen for the new building, and all that part of the churchyard will be covered with concrete. Dr. Tristram, K.C., stated that he felt justified in law, and under the provisions of the Disused Burial Grounds Act of 1884, in complying with the prayer of the petition, and he also agreed to extend the faculty to the screening off of a portion of the church, near the new vestry, for use as a choir vestry. The church was erected in Hackney-road in 1841, after Lewis Vulliamy's plans and designs, for about 1,000 sittings.

BUILDING BY-LAWS, CARDIFF.—In answer to a question put by Mr. John Chappell at a meeting of the Public Works Committee on Thursday last week, Mr. Veall and other members stated that many of the by-laws were ridiculous. The limit of headroom was 10 ft., and if a man wanted to get 10 ft. 6 in. he must increase the thickness of the walls from 9 in. to 13½ in. Mr. Harpur called attention to several breaches of the by-laws, in one case the builders not having put in woodwork of the dimensions required. Mr. Morgan Thomas remarked that some builders believed the Corporation would not enforce the by-laws. Alderman Mildon said the same by-laws were in force at Barry, but in many respects absolute compliance was not insisted upon. The Borough Engineer replied, in answer to a question, that he did not know any place where they were insisted upon in their entirety. The Committee endeavoured to get alterations made, but the Local Government Board would not accept them. Alderman David Jones observed that some of the by-laws were absurd. On the motion of Mr. Chappell, it was resolved that in the case referred to the by-laws be adhered to, and that proceedings be taken against the builders for not carrying them out.—*Western Mail.*

DISFIGUREMENT BY ADVERTISEMENTS.—In addition to the Metropolitan Borough Councils which have already been reported in the *Builder* as having taken action upon the circular letter from the Royal Institute of British Architects upon the abuse of buildings by advertisement hoardings, the following have considered the matter:—St. Pancras Borough Council has resolved to send a communication to the Institute, expressing sympathy with the objects they have in view; Shoreditch Borough Council has passed a motion agreeing with the purport of the Institute's letter, and in support of legislation to regulate the display of advertisements; Paddington Borough Council has, upon the recommendation of the General Purposes Committee, resolved to inform the Institute that it has "no observations to make" upon the letter.

WITHAM HALL.—The name of the clerk of works, given in our last issue as "Mr. Fletcher," should have been "Sletcher." The mistake arose from a not very clear handwriting in the communication sent to us. Proper names should always be very clearly written, or mistakes are inevitable.

TOTTENHAM COURT-ROAD (SOUTH END) IMPROVEMENT.—Mr. B. I'Anson Breach, of No. 29, Fleet-street, surveyor, has just issued his award, dated July 14, made by him as arbitrator, under appointment by the Local Government Board, for the purposes of the London County Council's Improvements Act of 1897, in respect of the widening of the southern end of Tottenham Court-road, by the demolition of the block known as Bozier's-court. Mr. Breach's award relates to a valuation made by Mr. James Green in 1898, under appointment by the Local Government Board, and to the premises on the west side of the footway which, until recently, extended from Oxford-street to Tottenham Court-road. He adjudges that the enhanced values, arising out of the improvement, of No. 1A, Tottenham Court-road and Bozier's-court, and No. 4, Oxford-street and Bozier's-court are, respectively, 5,200*l.* and 7,700*l.*, as compared with the Council's assessments of 7,432*l.* and 7,840*l.*; and he confirms the Council's assessments, made in July of last year (to which, however, no objection had been taken) in respect of the enhanced values of the four remaining properties—namely, the entrance to the Oxford Music Hall, 1,271*l.*; No. 2, Tottenham Court-road, 1,588*l.*; No. 3, 1,857*l.*; and Nos. 4 and 5, 1,380*l.* The fee simple of No. 4, Oxford-street, vests in Balliol College, Oxford. The schedule attached to the awards specifies the improvement charges on the several six properties, being, respectively, equal to 3 per cent. per annum upon one-half of the enhanced values; the latter are assessed after all fair and proper deductions made for rates, taxes, etc.

DRURY-LANE THEATRE.—The arbitration between the Drury-lane Theatre Company and the London County Council, as to the works to be done to comply with the requisitions of the latter body, is being held before Mr. John Slater, architect, the arbitrator. Mr. Philip E. Pilditch is the architect acting for the Theatre Company, and Mr. W. E. Riley, the Superintending Architect to the London County Council, for the Council, assisted by members of their respective staffs.

THE EXPORTATION OF WORKS OF ART.—A Bill has been presented to the Spanish Cortes, proposing to prohibit the exportation of works of art from Spain, except by special authorisation from the Minister of Education and Fine Arts. The following are to be regarded as works of art:—Architectural monuments, sculptures, paintings, inscriptions, books, manuscripts, coins, medals, costumes, tapestry, engravings, pottery, arms, instruments, and all other objects of archæological or historical interest. The Bill, however, empowers the Minister of Public Instruction to allow the temporary exportation of works of art, under guarantees insuring their preservation and re-importation into Spain. The Bill does not apply to the works of living artists, or to reproductions of such works.

ENGLISH CEMENT IN PORTUGAL.—Mr. Consul Grant writes from Oporto that there is a steady increase in the imports of cement to that city, but he adds that very little now comes from the United Kingdom, on account of its inability to compete in price with that coming from Belgium. In 1900, the imports amounted to 5,135 tons; in 1901, 5,708 tons; in 1902, 5,923 tons; and in 1903, 5,974 tons.

HONDURAS TIMBER.—Acting-Governor Cork, reporting on the Blue Book of British Honduras for the year 1903, states that the quantity of cedar forwarded to the United Kingdom during the year was 292,201 ft., value 1,483*l.*, and the quantity of mahogany so forwarded was 1,887,386 ft., value 111,116*l.* The export of mahogany and cedar to the United Kingdom is now limited to wood of good grain and of large size, the prices obtained for wood of this class repaying the cost of squaring, etc., whereas, in former years, the total output was sent to that market. The decrease in 1902 shipments of mahogany to England was 1,846,780 ft.; in 1903, there was a further decline of 1,951,954 ft. The general output of mahogany and cedar, however, during 1903, showed an increase, as compared with 1902, of 3,535,132 ft., this increase being solely due to the operations of two American firms engaged in supplying the American market. The wood is purchased unsquared, and paid for on the spot, thus saving the wood-cutters considerable labour and expense in preparing the logs for the home market, freight, etc.

MUSEUM OF PRACTICAL GEOLOGY, JERMYN-STREET.—Arrangements have been made which will make it unnecessary to close the museum for a month in autumn as heretofore; it will therefore remain open to students and visitors daily.

CORRECTION.—Referring to the Savoy Hotel announcement in our issue for June 25 last, Messrs. W. and J. R. Hunter ask us to point out that the oak *only* for the panelling at Simpson's Restaurant was supplied by them, not the panelling itself.

INDIAN ARCHÆOLOGY.—According to the annual Blue Book on the progress and condition of India, the archæological surveyor was occupied during the past year in visits to monuments in Ahmedabad, Bijapur, and other parts of Bombay, and also toured with the Director-General of Archæology in Central India, Rajputana, and Sind. The expenditure on the conservation of ancient monuments in the Bombay Residency amounted to 1,120*l.* In the United Provinces a report on Akbar's tomb at Sikandra, near Agra, by the late Mr. Smith, was submitted to the Government; the staff was engaged in surveying historical buildings in the Agra fort. The amount of 10,570*l.* was spent in the province during the year from Government revenues on conservation. The Surveyor of the Punjab circle reports that several important works were commenced and partly completed, with a view to the conservation of monuments, an allotment of 4,300*l.* having been made for the purpose. He also submits a memorandum on the preservation of archæological material in the Peshawar district. In Madras the expenditure is given as 1,147*l.* The excavation of prehistoric remains at Adinachallur was the most notable operation of the year, and resulted in the unearthing of a very large number of objects of great interest. In Bengal the Archæological Surveyor visited seven districts, and also Assam, in the course of his tours. The Director-General was to have visited Bengal, but the visit had to be postponed. In Burma, 2,746*l.* was spent on conservation. Much progress was made in improvements to the Mandalay palace and its surroundings. The Director-General has been engaged in tours of inspection in several provinces, in the course of which he was able to give advice to the local authorities with a view to the organisation of archæological efforts on a consistent plan throughout India.

Legal.

ACTON ANCIENT LIGHT DISPUTE.

IN the Chancery Division on the 12th, 13th, and 14th insts. Mr. Justice Kekewich had before him the case of Kine *v.* Jolly, an action by the plaintiff, Mrs. Sarah Kine, the owner of a house and premises known as "Woodthorpe," Acacia-road, Acton, against the defendant for an injunction and damages in respect of the alleged obstruction of the ancient lights of the plaintiff, and also for trespass. The case had been tried by his lordship before, and now came on for a re-trial on an amended statement of claim.

By the amended statement of claim it appeared that the ground floor of the plaintiff's premises had on the west side two windows, lighting respectively the drawing-room and a smaller sitting-room, and a door with glass panels and a window or fanlight over it, lighting the entrance-hall. The plaintiff alleged that, in spite of remonstrances made on her behalf, the defendant had erected and maintained, and still maintained, a high building near to the said windows, glazed panels, and fanlight, and had thereby materially obstructed the light from entering into the said dwelling-house, and interfered with the plaintiff in the use and enjoyment of the said land and dwelling-house. The plaintiff also alleged that the defendant's building projected over and overhung her land, and that the defendant, by erecting and maintaining his said building, trespassed, and was still trespassing, on her land. Hence the present claim for an injunction and damages.

The defence was a general denial of the allegations in the statement of claim.

Mr. P. O. Lawrence, K.C., and Mr. Cann appeared for the plaintiff, and Mr. Stewart Smith, K.C., and Mr. Vernon for the defendant.

Mr. Lawrence, in opening the case, said that plaintiff, Mrs. Kine, was a lady living at "Woodthorpe" with her daughter and son-in-law. That was the condition of things in October, 1902, when the next plot was sold to the defendant, Dr. Jolly, who commenced to build a house on the property. There was then a dispute as to some encroachment on the plaintiff's land, and there was an interview between Mr. Reed (plaintiff's son-in-law) and the defendant's architect, Mr. Monson. His contention was that at that interview the question of ancient lights was mentioned. Mr. Monson told Mr. Reed that the plaintiff's lights would not be interfered with. The building of defendant's house went on, and on February 10, 1902, the plaintiff's solicitor wrote a letter to the defendant saying that his building obstructed the plaintiff's light, and he should commence an action on the plaintiff's behalf if the obstruction was not removed. Defendant therefore could not say that he had erected his house in ignorance of the plaintiff's rights. The writ was issued on April 2, 1903. At that time the defendant's house was not completed, and there would have been no difficulty in so modifying the plans as to prevent the defendant's house obstructing the plaintiff's light. The plaintiff's house was an ordinary dwelling-house of a suburban character. On the ground floor it had a morning-room.

His lordship: What are the ordinary purposes of a room?

Mr. Lawrence: Habitation, I should suggest. The ordinary purpose of comfortable occupation, I should submit. Our contention will be that this building of the defendant comes within the definition of nuisance as laid down in the case of the Home and Colonial Stores *v.* Colls, in so far as it materially diminishes the enjoyment by the plaintiff and her household of her house as a dwelling-house.

Mr. and Mrs. Reed both gave evidence to the effect that the light of the plaintiff's house had been materially and substantially interfered with by the defendant's building.

Mr. R. W. Virgo, a merchant now residing at Teddington, but who formerly lived at "Woodthorpe," proved that the plaintiff's lights were ancient. He also said that the light of the plaintiff's house was very much diminished by reason of the defendant's building.

Mr. R. Nichols, a builder, examined, said he had lived in the neighbourhood of "Woodthorpe" for twenty-five years. He had frequently been in "Woodthorpe," and had done decorating work there for Mrs. Kine. He noticed a considerable difference in the plaintiff's house since Dr. Jolly's wall was up. The difference was that, instead of going into a nice, bright house as formerly, you went into a gloomy one now.

Cross-examined.

It was impossible to read in the morning-room at all now unless you got close to the window.

Mr. E. C. P. Hodgkinson, an architect and surveyor practising in Wellington-street, Strand, said he visited the premises in question on February 3, 1903, and again on February 5, when he took measurements from which he had prepared the plans put in. The distance between the wall of Dr. Jolly's house and the morning-room window of plaintiff's house was 26 ft. 9 in., and the height of Dr. Jolly's wall was 24 ft. 6 in. He came to the conclusion that Dr. Jolly's wall seriously depreciated the light in the morning-room of "Woodthorpe," and caused a slight defect in the light of the drawing-room. The hall light of "Woodthorpe" was also interfered with by Dr. Jolly's wall. He considered that Dr. Jolly's wall had rendered "Woodthorpe" less comfortable for the purposes of habitation.

Mr. G. P. Pratt, an architect and surveyor, also gave evidence generally corroborating the evidence of the last witness. This evidence concluding the plaintiff's case.

His lordship said he thought it would be convenient if Mr. Stewart Smith told him his view of the position of the law as it was applicable to the facts as they knew them.

Mr. Stewart Smith said that the decision in the Colls case had entirely changed the issue. The first thing that a plaintiff had to establish now was not whether there had been a diminution of light, but whether there had been a nuisance. The question therefore was, was there in the present case a nuisance within the meaning of the decision of the House of Lords in the Colls case? He submitted not. To have a nuisance you must have something for which a jury would award damages. His evidence would prove that there was no diminution of light in this case which made the house less habitable—that caused any serious inconvenience. There was one other point he relied upon, and that was the angle of 45 degrees. The angle of 45 degrees had been adopted as a rough test, and both Lords Davey and Lindley, following Lord Selborne, appeared to think that, assuming other things to be equal, an angle of 45 degrees of light coming to the window of a plaintiff was all that he or she was entitled to.

Mr. Edward Charles Monson, an architect, was called, and stated that he had prepared the plans in the case. With regard to the light to the windows complained of, he found that the plaintiff's drawing-room window had an unobstructed light of 45 degrees down to the grass line. The morning-room had over 50 degrees of unobstructed light. Witness applied the test of reading in the drawing-room about mid-day on November 7, and he could read in all parts of the room, and even with the blinds down. The same test was adopted in the morning-room, and with the same results. In his opinion, the building of the defendant's house had not interfered with the comfortable enjoyment of the plaintiff's house.

Cross-examined,

He was of opinion that the value of plaintiff's house had not diminished at all by reason of the defendant's building. He really thought that the value of the plaintiff's house had been enhanced by reason of having alongside it such a house as the defendant's.

In answer to his lordship, the witness said he did not deny that there was some obstruction to the light of the plaintiff's sitting-room window.

Mr. L. R. Vigers, surveyor, also gave evidence to the effect that, although the defendant's building had obstructed some of the light formerly coming to the plaintiff's rooms, there was a sufficiency of light for all ordinary purposes.

Mr. E. B. l'Anson and Mr. E. Monson, architects, also gave evidence on behalf of the defendant.

At the close of the evidence Mr. Stewart Smith addressed his lordship, contending that the decision of the House of Lords in the case of the Home and Colonial Stores *v.* Colls governed this case, and that judgment should be for the defendants.

Mr. Justice Kekewich said that the decision of the House of Lords in that case had corrected a large number of judges, including himself, as regarded some misconception as to the law relating to ancient lights. He should go no further than that with Mr. Stewart Smith's contention.

After hearing further argument, his lordship suggested that the parties should put their heads together with a view to settling what the money value of the damage would be. He would not dismiss the action, but would reserve his judgment, and he would require to hear further arguments if the parties could not come to terms as to the monetary value of the loss of light the plaintiff had suffered.

The case was again mentioned before Mr. Justice Kekewich on the 15th inst.

Mr. Lawrence said that, while his client thought it would be a very good thing if the course suggested by his lordship was adopted, the other side were unable to agree to that being done.

His lordship: Of course they are entitled to thrash the matter out in their own way.

Mr. Stewart Smith, K.C., said his real difficulty was this:—If the surveyor gave an opinion, there would be no means of testing the grounds upon which he gave it, and it might be very important, if the case was discussed elsewhere, to ascertain the grounds upon which any damage was alleged.

His lordship: Very well, you must deal with it in your own way, but I cannot help thinking you are very foolish.

Mr. Lawrence: The only question remaining is when will it be convenient for your lordship to go on with the case.

His lordship: I will take it to-morrow week, and fix nothing else for that day.

EMPLOYERS' LIABILITY ACT:

QUESTION AS TO PACKING AND FENCING SAW BENCHES.

At the Marylebone County Court on the 11th inst., before Judge Stonor, George Smith, a builder's machinist, 2, Chichester-road, Kilburn, N.W., brought an action, under the Employers' Liability Act, against Mr. William Giles, builder and contractor, Macroom-road, Paddington, W. The plaintiff claimed 429*l.* damages, in respect of personal injuries, alleged to have been caused owing to negligence on the part of the defendant or his servant or servants.

Mr. E. Abinger, counsel, appeared for the plaintiff, and Mr. W. Shakespeare, counsel, for the defence.

Plaintiff's counsel stated that his client had been in the defendant's employ, and met with the accident in question while engaged in cutting rebates in long window sills, by means of a large circular saw. The cut was required to be 5 in. deep, but the only available saws on the job were one, 13 in., and another, 28 in., in diameter. The former was two small for the work, while the latter, even when the bed of the bench was raised to its full extent, left the saw 7 in. above the bench. He asked the foreman what was to be done, and was told to "pack" the bench 2 in., so that the saw would cut only 5 in. deep. Under the supervision of the foreman the bench was so packed, and the foreman assisted in pulling the sills through the machine. They had just finished one of the cuts when the strip of wood slipped off the packing-piece. The plaintiff was in the act of replacing the strip when, it appeared, the length was raised, and three fingers of the man's left hand were caught by the saw and completely cut off. Counsel said his case would be that, although the plant might have been perfect in itself, it was defective, by reason of the packing being required, and he also contended that there was negligence on the part of the defendant in not providing a guard or fence for the bench.

Medical evidence having been given as to the man's injuries,

The plaintiff bore out counsel's opening statement. He added that he had had some twenty-one years' experience in the trade. There was a "hood" above the bench, but this left the saw quite "naked." It was usual in the trade to have several different sized saws in the shop.

In cross-examination, the plaintiff said it was not customary in the trade to use packing, either on rising and falling benches or those with a fixed bed. If, however, packing were used, it was usual for the machinist to select and arrange it himself. The foreman on the job in question was not a machinist, and he (plaintiff) arranged the packing. Prior to the accident he told the foreman that a smaller saw would be required, and the foreman promised to get one suitable for the job.

George Bartlett, builder's machinist, said he had had about thirty-five years' experience in the trade. Witness maintained that at least half a dozen saws of different sizes should be kept for such work, and that all circular saws should have guards upon them.

William George Watson said that he had had about seventeen years' experience as a machinist, and that of late years it had been the custom to use guards on saw benches.

For the defence, Mr. Walter Fish, of the firm of Fish and Son, builders' machinists, Curtain-road, E., said he had had about thirty-five years' experience in the business. For the work in question he did not consider that a guard was necessary, because the top of the saw was completely embedded in the wood until the cut was made, and then the machinist had no need to touch the wood.

Cross-examined, witness said that the object of the rising and falling bench was to obviate the necessity for packing.

Mr. Stanley F. Prest, engineer, Suffolk-lane, Cannon-street, E.C., said that, when visiting shops on the continent, in America, and also in this country, he had found that there was no invariable practice in the trade as regarded the use of the guards. All guards to circular saws were more or less modern inventions, and a guard for fixing at the back of the saw—like one produced—was one of the latest developments of the invention.

Counsel for the defence submitted that an employer was not bound to look out for and adopt every fresh invention for the safety of his men, such as the guards in question, and that the omission of the defendant to provide such a guard did not amount to negligence within the meaning of the Act, but only meant that he had not adopted one of the latest improvements. Counsel also pointed out that there was no evidence as to the plaintiff having complained about the absence of a guard.

Counsel for the plaintiff said he did not suggest that an employer should adopt every new contrivance for use in his work, but he submitted that employers were under the legal obligation of using all ordinary precautions for the safety of their men, and that the defendant in the present instance had failed to do so.

The judge said that, in view of the extremely important questions raised by this most difficult case, he must take time to consider his decision.

PAVING APPORTIONMENT DISPUTE.

THE case of Scott *v.* the Investors' Property Corporation came before a Divisional Court of King's Bench, composed of the Lord Chief Justice and Justices Kennedy and Phillimore, on the 12th inst., on a case stated by the magistrate of the North London Police Court on a point of law under the Metropolis Local Management Act, 1855.

The case stated that Scott was a paving rate collector to the Hackney Borough Council, which was the paving authority for the district. The respondents were the owners of No. 22, Tyssen-street. In July, 1903, the Council resolved to make up and pave Tyssen-street as a new street, and an apportionment was duly made, the sum of 26*l.* 9*s.* being apportioned upon the respondents. The street adjoined the North London Railway. The respondents not paying the amount, the proceedings were taken to recover the amount. The part of Tyssen-street in question is situated on the south side of the railway, to which it runs parallel. The north side of the street was supported by a retaining wall abutting on the railway, which is 9 ft. below the level of the street. Before 1880, when the houses were erected, the site occupied by the street was surplus land belonging to the railway company, who sold to the respondents' predecessors-in-title, and they filled up the land and got the permission of the Metropolitan Board of Works to lay out Tyssen-street as a new street 20 ft. in width. The houses were then erected, including the one in question, of which the respondents were the occupiers for the residue of a term of ninety-nine years. No part of the wall was included in any of the leases of the houses abutting on the street. No sum had been apportioned in respect of the retaining wall. At the hearing it was contended, on behalf of the respondents, that their predecessors-in-title were the owners within the meaning of section 250 of the Metropolis Local Management Act, 1855, of the retaining wall, and that the apportionment was bad by reason of the omission to apportion on them any part of the cost of paving the street. For the appellants it was contended (*a*) that the land did not abut on the street, by reason of its being at a lower level; (*b*) that the land on which the retaining wall was built, not being capable of producing a rack-rent, was *extra commercium*; and (*c*) that the wall, having been built with the object of supporting the highway, and being essential to the user thereof, and the highway having been dedicated to the public, the wall was part of the road, and vested in the appellants as the highway authority, and the predecessors-in-title of the respondents had no longer any beneficial ownership in it. The learned magistrate was of opinion that the ownership of the land on which the retaining wall was built remained vested in the respondents' predecessors-in-title, and that the land on which the street was made, having been artificially raised, the contention that the land belonging to the said predecessors-in-title did not abut on the street, by reason of its being at a lower level, was not maintainable. He also held that there was no evidence before him to show that the land and wall had become vested in the appellants as the highway authority. He further held that the land and wall thereon were not incapable of commanding a rental, and that the case fell within the principle of Williams *v.* the Wandsworth Board of Works, and he therefore dismissed the summons. Hence the

present appeal, the question being whether the magistrate's determination was right in point of law.

Mr. Horace Avory, K.C., appeared for the appellants, and Mr. Macmorran, K.C., and Mr. C. Glen for the respondents.

At the conclusion of the arguments the court dismissed the appeal, holding that the decision in Williams v. the Wandsworth Board of Works governed the point in question.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

13,835 of 1903.—R. STANLEY and STANLEY BROS., LTD.: *Waste Fittings for Sinks.*

This invention relates to waste fittings for sinks, the object being to provide a waste plug which fits perfectly tightly in the waste hole without the aid of cement, or the like, and which is capable of being removed at any moment for the purpose of cleansing or for any other object. The invention also enables the gully to be easily detached, the same being held up against the sink bottom by the waste plug, or a projection thereof, and connected by a Stanford or other non-prominent joint with the waste pipe. According to the invention the hollow waste plug carries a threaded nozzle which projects downwards, and engages with a corresponding thread inside the top of the gully. Should the latter be made of stoneware, the thread will be round, and of a quick type, but a cast-iron gully may sometimes be used, in which case, the thread, although preferably a fast one, would be smaller. Before applying the plug, the seating connecting the mouth of the waste hole is provided with a rubber or other water-tight ring.

16,072 of 1903.—J. G. STIDDER: *Jointed Connexions between the Flush and Discharge Pipes to Closets and other Arms and Outlets for same.*

Connexions between the new and old work for flush or discharge pipes for closets, lavatories, and the like, comprising a rubber ring having wedge-shaped elevation with scarfed joint, a metal staple passing through two holes, one in each side of scarf so as to secure the ring in position on the pipe or arm ready to receive a metal back ring with wedged and beaded projections made in two parts, with jointing lugs and screws, and two or more slotted arms made on this ring for the bolts to pass into, a metal expanding ring, provided to pass round the arms or pipes, with hooked eye-bolts and nuts for securing the same into position. On this ring two or more loose eye-bolts are fixed, which pass into the slotted lugs on back ring, when these nuts are screwed up the scarf rubber ring is forced into position, thus making a water or air-tight joint.

16,872 of 1903.—W. THOMSON: *Pulley Fittings for Carrying Sliding Doors, and the like.*

Pulley fittings for carrying sliding doors, and the like, consisting of a frame formed with two parallel bars, with projecting down end stop pieces, and having a transverse stop stay bar.

18,064 of 1903.—J. E. WILLIAMS: *Cement for Use in Repairing Retorts, and for like purposes.*

This invention has for its object to produce a fireproof cement, specially suitable for repairing retorts, crucibles, and other objects subject to very great heat. According to the invention the cement is made of the following material—viz., magnetite, a species of iron ore, china clay, barytes, silicate of soda, and borax. The proportions are, by preference 25 per cent. of ore, to 75 per cent. of the remainder, the actual quantities of which latter may be, for example, 200 cwt. of china clay, 100 cwt. of barytes, 40 gallons of silicate of soda (100 twaddle), 24 gallons of water, and 28 lb. of borax. In making and using the cement the various materials are first well mixed together, and then applied to the object to be repaired in like manner to applying mortar to brickwork.

18,290 of 1903.—J. DANSEITE: *Ceramic Tiles, Plates, Panels, and the like, and the Method of Manufacturing same.*

A method for the manufacture of trussed ceramic tiles, plates, and the like, in which metal network is placed vertically and centrally guided between revolving cylinders or gypsum, or the like, and the ceramic paste is fed by conveyors above the cylinders to each side of said network, so that on revolution of the cylinders the paste is caused to adhere to both sides of the network, the latter thus enclosed in the paste being guided on to an inclined path formed by closely-placed, freely-revolving rollers.

21,654 of 1903.—D. DONE and C. BRAWN: *A Lock, Principally Applicable to Expanding or Collapsible Gates, used for Closing the Openings of Lifts, Shop Fronts, Gateways, and for other purposes.*

A lock for doorways, gateways, and other openings, consisting of a pivoted latch, or bolt, which is capable of engaging a stud or recess provided on one part of the opening to be closed, and which is capable of being turned back within the lock case, and retained therein when the gate or door has been opened.

24,381 of 1903.—D. M. BARNETT: *A Gauge and Scribing Tool.*

A scribing tool for carpenters, plasterers, and others, consisting of a number of wires, rods, or needles arranged parallel to each other within a holder or frame in combination with a presser plate; a metal bearing plate engaging therewith and having forked ends engaging with said bearings or supports of said frame; a pressure spring bearing upon said bearing plate and a set screw or its equivalent.

24,951 of 1903.—D. MCLEAN: *Chimneys, and Means for Preventing Smoking.*

This consists in providing a chimney with one or more upwardly inclined outlet passages, having open ends and arranged in any convenient position between the top of the chimney and the fireplace from which the chimney extends.

26,007 of 1903.—W. BROTHERS: *Manufacture of Crystalline Gypsum, Applicable for Filling purposes.*

A process of preparing a loose crystalline mass of calcium sulphate ($CaSO_4\ 2\ H_2\ O$) known as pearl hardening satin finish, crystal finish, or by other name, from calcium sulphate, comprising the cooking or boiling of such calcium sulphate in the presence of water, or in an aqueous solution, cooling the crystals so formed before removing the water, and agitating the mass during the process of cooling, to cause such crystals to form or precipitate separately, and subsequently removing the water and drying them.

26,313 of 1903.—W. H. GLASER: *Adjustable Scale for Use with Scribing Blocks, and the like.*

An adjustable scale for use with scribing blocks, and the like, which consists essentially of a scale, mounted upon a base, and a plane-working surface, in such a way that relative motion is possible between the scale and the base, the divisions being parallel to the plane-working surface of the base; and the scale being furnished with an endless numbering band, arranged so that any selected numeral can be brought opposite to any selected main division of the scale.

9,092 of 1904.—W. J. EDLAND: *Windows or Casements.*

This relates to the construction of windows, casements, fanlights, skylights, and the like, with an outer frame and an inner or glass frame, said inner frame being hinged or otherwise suitably mounted on a cranked bar pivoted to the outer frame.

9,762 of 1903.—A. DREES and E. LIERSCH: *Pipe and like Joints, and Means for Securing the same.*

A packing for wrought-iron flanged or bell-mouthed pipes, having funnel-shaped enlarged sleeves, consisting in the combination of an internally suitably tapering or conical, or like shaped clampering, mounted on the tapering bell-mouth, with a clamp ring, mounted on the smooth end of the tube, and provided with an annular rib projecting towards the interior of the sleeve.

11,379 of 1904.—L. PARIL, G. KÁROLYI, and E. PAATZ: *Means for Generating Heat and Applying it for Useful Purposes.*

Means for generating heat by the addition of water, consisting of burned lime, to which are added either separately or in groups, potassium carbonate, magnesium carbonate, sodium phosphate, calcium phosphate, sodium nitrate, and sugar.

11,012 of 1904.—F. REHFUSS: *Ceiling Blocks.*

Ceiling stones, rhomboid or quadrate in form, having parallel abutments by means of which they are pushed, dovetailing into each other for the construction of flat ceilings, and also having one or more corners truncated.

11,738 of 1904.—T. JONES: *Construction of Panic Bolt for Doors.*

A panic bolt, adapted to retain single or double folding-doors in a closed position until pressure is applied on the side from which immediate ingress is required, consisting of a combination of a push element which is guided to slide normally to the surface of the door, to links extending in opposite directions, which links are pivoted to the push element, and two bolts, pivotally connected to the side links, which bolts are guided to move in a line parallel to the surface of the door, and arranged to recede from, or approach one another, when actuated by the movement of the push element transmitted through the links, the relative situations and proportions of the parts being such that, in the outward extreme position of the push element, corresponding to the closed and fastened position of the door, the links are approximately in line with one another and nearly parallel to the line of motion of the bolts.

11,713 of 1904.—F. NORDMANN and F. SAUERLAND: *Water-closets.*

A water-closet ventilation, frost proof, and without stagnant water, characterised by the service pipe passing into a two-way valve, which, when the closet is used, automatically lets the water pass on to the cistern, and causes the water left between the two-way valve and the cistern to run off into the drain, so that every time the closet is used, the weight applied to and removed from the seat brings about the filling and the complete emptying of the pipes and cistern exposed to frost.

13,960 of 1903.—T. BRETHERTON: *Paving Blocks.*

A paving block, consisting of an iron casting resting on supports, and studded over on its upper surface with iron projections, and formed with dovetailed or toothed edges and perforations for wooden blocks, the whole being held together and filled up solid with a suitable filling material.

14,000 of 1903.—J. STEPHENSON: *A Building Block.*

A building block, made in accordance with this invention, is formed of two headers and two stretchers enclosing a central cavity or opening. The width of the block is equal to the thickness of the wall to be built, and the blocks may be provided with a spigot or projection at one end, and a socket or recess at the other, to interlock or bond with each other.

18,090 of 1903.—J. L. FERRELL: *Fireproofing Compounds, and the Art of Making the same.*

A process of making a fireproof compound, which consists in mixing with four parts of a 45 Baumé aqueous solution of sodium silicate, one part of a 24 Baumé aqueous solution of sodium chloride, and adding to said mixture one part of a 26 Baumé aqueous solution of sodium hydrate, and adding to such mixture sufficient water to reduce the same to 20 Baumé.

18,092 of 1903.—J. L. FERRELL: *Fireproofing Compounds, and the Art of Making the same.*

A process of making fireproofing compound, which consists in making an aqueous solution of aluminium sulphate, and mixing with said solution an organic acid capable of obviating the discolouring effect of said salt *per se* in the presence of iron.

19,534 of 1903.—G. H. WARREN and S. FONTAINE: *Construction of Storage Tanks, Bins, Silos, and the like.*

A storage tank, characterised by having an outer casing and an inner casing spaced apart, the inner casing being formed of fireproof bricks, having channels formed therein, plastic binding means arranged in said channels, binding bands embedded in the plastic binding means in the channels, and braces between the inner and outer channels.

6,826 of 1904.—D. D. MCBEAN: *Sheet Piling for the Support of Excavations.*

A composite sheeting, comprising a plurality of similar rectangular timbers of varying lengths, secured edge to edge, the edges of the sheeting being provided respectively with a tongue and a groove, and the entering end or point of the sheeting being tapered across its width, and provided with inclined shoulders at one edge.

6,829 of 1904.—D. D. MCBEAN: *Method of and Means for Forming Foundations for Coffer-dams, and the like.*

This relates to excavation work, consisting in the combination of piles driven into the bed of the excavation, a frame supported upon the same, and having wallings serving as sheeting guides, series of piles in and along the banks of the excavation outside the sheeting walls, and sheeting-driver platforms mounted thereon.

7,736 of 1904.—H. SPATZ: *Manufacture of Fireproof Stone or Stoneware and Mortar.*

The manufacture of artificial stone or stoneware from finely-divided quartz, or other suitable silicious mineral, and a calcareous binding medium, adapted to form silicate of lime, which consists in using as a binding medium a mixture of the said calcareous substance with waste liquor obtained from the manufacture of chemical wood cellulose.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

8,542 of 1904.—R. J. GODDARD: *An Asphaltic Mosaic Flooring or Paving Composition.*

An asphaltic mosaic flooring or paving, consisting of a mixture of white asphalte, incorporated in a heated state with pieces of marble, limestone, spar, slag, or other suitable material.

9,580 of 1904.—N. R. GRIMM: *Two-Story Tenements.*

A two-story tenement, having a basement or cellar, a light shaft accessible therefrom, a stairway leading from the basement or cellar to the second floor, and disposed partly in the light shaft and partly in the first floor, and a cover for that portion of the stairway which is in the light shaft.

11,518 of 1904.—J. RUDIGER: *Self-acting Flushing Cisterns, with Periodical Discharge.*

A self-acting flushing cistern for the periodical discharge of water, comprising in combination a tank, a syphon vertically arranged in said tank, a vertical inflow branch at one end of the syphon provided with an opening for the escape of air, and a vertical outflow branch at the other end of the syphon, passing through the bottom of the tank, a narrow tube in the centre part of the syphon extending above the curvature of the same, an air escape in said narrow tube, and a narrow tube connecting the centre part of the syphon and the outflow branch.

11,565 of 1904.—J. DRAENERT: *The Method for the Manufacture of Bricks, Building Blocks, and the like, and Apparatus therefor.*

A method for the manufacture of bricks, building blocks, and the like, with strengthened edges and corners, in which a mould is first completely filled with suitable plastic material, whereupon the latter is compressed to a certain degree at the edges and corners of the mould by means of a frame-like stamp or die, the space thus produced in the mould by such compression being then again filled with plastic material, and subjected to a final compression.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

July 7.—By E. ROBINSON & Co.

Harlesden.—85 and 87, Burns-rd., u.t. 89 yrs., g.r. 5*l.*, 5s., w.r. 83*l.* 4s.	£460
Willesden.—43, Church-rd., u.t. 65 yrs., g.r. 10*l.* 10s., e.r. 55*l.*	300

By MADDISON, MILES, & MADDISON (at Bungay).

Bungay, Suffolk.—A cowkeeper's and market-gardener's occupation, 7a. 2r. 19 p., f. and c.	200
South Elmham St. Michael, Suffolk.—"The Three Ashes Farm," 23a. 3r. 14 p., f.	410

July 8.—By DAVID J. CHATTELL & SONS.

Blackheath.—Orchard-rd., "Branksea," u.t. 92 yrs., g.r. 6*l.*, p.	1,400
Kensington.—37, Hanover-gdns., u.t. 41 yrs., g.r. 3*l.*, y.r. 35*l.*	300

By HAMPTON & SONS.

Petter.—195, Lower Richmond-rd. (s.), u.t. 79½ yrs., g.r. 7*l.*, y.r. 45*l.*	450

By JONES, LANG, & Co.

Kensington.—50, Margravine-gdns., f., p.	535
Hammersmith.—56, Biscay-rd., u.t. 86 yrs., g.r. 3*l.* 10s., w.r. 40*l.* 6s.	300

By LOWE, GOLDSCHMIDT, & HOWLAND.

Ilford.—Belgrave-rd., f.g. rents 14*l.* 14s., reversion in 89 yrs.	365

By C. C. & T. MOORE.

Commercial-road East. — Ellen-st., the "Globe" p.h., freehold rental of 75*l.*, reversion in 76 yrs.	1,810
Spitalfields.—Fort-st., the "Gun and Tent" p.h., freehold rental of 75*l.*, reversion in 22½ yrs.	1,450
Croydon.—Wilford-rd., f.g. rents 100*l.*, reversion in 55 yrs.	2,340
Notting Hill.—Latimer-rd., etc., f.g. rents, 16*l.* 10s., reversion in 43 yrs.	460
Bethnal Green.—Northampton-st., f.g.r. 140*l.*, reversion in 15 yrs.	2,900
Manor Park.—Romford-rd., f.g. rents 60*l.*, reversion in 63 yrs.	1,810
Manor Park-rd., f.g.r. 35*l.*, reversion in 63 yrs.	910
Bromley, Kent.—Hope-pk., l.g. rents 27*l.* 10s., u.t. 42 yrs., g.r. nil	425
Holborn.—28, Red Lion-st. (s.), f., y.r. 75*l.*	1,760

By TRAFFORD & CARTER.

Limehouse.—1 to 4, William's-pl., f., w.r. 5*l.* 12s.	330
Stepney.—45, 67, and 69, Eastfield-st., f., w.r. 10*l.* 14s.	405
66, Copley-st., u.t. 41 yrs., g.r. 3*l.* 10s., w.r. 3*l.* 16s.	205

By WAGSTAFF & SONS.

Barbican.—70, 72, and 74, Chalgrove-rd., u.t. 49½ yrs., g.r. 10*l.* 10s., w.r. 72*l.* 16s.	440
Clapton.—170, Rushmore-rd., u.t. 62½ yrs., g.r. 4*l.* 10s., w.r. 36*l.* 8s.	275

July 6.—By Messrs. BALLS (at Braintree).

Stisted, Essex.—The Brook Ley meadows, 6 a. 1 r. 1 p., f.	120
"Kiln Field," 6 a. 0 r. 16 p., f.	120
Wethersfield, Essex.—Freehold cottage and 29 a. 3 r. 20 p.	190

July 7.—By J. E. WALTER (at Saxilby).

Saxilby, Lincs.—Shop, slaughter house, blacksmith's shop, and 0 a. 1 r. 9 p., f., y.r. 22*l.* 12s.	480
Saxilby, Lincs.—Two freehold cottages and 0 a. 1 r. 5 p.	£350
Freehold house, shop, and 0 a. 1 r. 35 p.	280
House and 3 a. 0 r. 26 p., f.	480
Freehold farmhouse and 34 a. 0 r. 22 p.	1,600
Four enclosures of land, 19 a. 3 r. 30 p., f.	1,170
Five freehold building plots	801
Saxilby, etc., Lincs.—A freehold farm, 35 a. 2 r. 9 p.	1,650
Broadholme, Notts.—Two freehold holdings, 123 a. 2 r. 12 p. f.	2,700
A freehold holding, 43 a. 3 r. 30 p.	765

July 8.—By G. B. HILLIARD & SON (at Chelmsford).

Great Waltham, Essex.—"Old Shaws Farm," 41 a. 1 r. 38 p., f., p.	455
East Hanningfield, Essex.—"Dolphins" and 12 a. 3 r. 13 p., c.	150
Wickham Bishops, Essex.—A freehold estate, 61 a. 0 r. 32 p.	1,800

By SAWDYE & SON (at Barnstaple).

Yarnscombe, Devon.—"Langley Barton Estate," 200 a. 1 r. 16 p., f.	4,025
"Rumsam Villa," f.	570

By W. BROWN & Co. (at Chesham).

Hawridge, etc., Bucks.—"Hawridge Court Farm," 157 a. 3 r. 37 p., f.	2,550
Six enclosures, 38 a. 2 r. 31 p., f.	850

July 9.—By SPELMANS' (at Norwich).

Trunch, Norfolk.—The "New Inn" and 2 a. 1 r. 32 p., f. and c., y.r. 14*l.*	1,200
Part of the Brewery Field, 4 a. 2 r. 19 p., f. and c.	100
The "Blacksmith's Close," 10 a. 1 r. 5 p., f.	275
North Walsham, Norfolk.—The "Royal Inn," f.	700
Swardeston, Norfolk.—Three copyhold cottages and orchard, p.	180

By SALTER, SIMPSON & SONS (at Norwich).

Sporle, Norfolk.—"The Priory Farm" (including site of Old Benedictine Priory), 295 a. 0 r. 5 p., f. and c.	3,650
Stibbard, etc., Norfolk.—"Emery's," "Lower Clipstone," and "Little Ryburgh" farms (including brick works), 437 a. 2 r. 26 p., f. and c.	5,850

By T. W. GAZE & SON, with G. SYMONDS (at Norwich).

Winfarthing, Norfolk.—"The Park Farm," 387 a. 2 r. 31 p., f.	8,500
Tibenham, Norfolk.—Pillsgate-st. farm, 152 a. 0 r. 2 p., f.	2,500

July 11.—By BLAKE & CARPENTER.

Kennington.—14 to 18, Shepherd's-pl., u.t. 42 yrs., g.r. 25*l.*, y.r. 135*l.* 5s.	750

By BUCKLAND & SONS.

Bloomsbury.—6 and 7, Little White Lion-st. (s.), f., y.r. 120*l.*	2,000

By FIELD & BLADES.

Bromley-by-Bow.—Bruce-rd., l.g.r. 43*l.* 6s., u.t. 58 yrs., g.r. 10*l.* 10s.	515
Holloway.—Hilldrop-rd., l.g.r. 30*l.*, u.t. 49 yrs., g.r. nil	575
Camden Town.—Camden-rd., l.g. rents 50*l.*, u.t. 32 yrs., g.r. nil	800
Holloway.—Mitford-rd., l.g. rents 74*l.* 10s., u.t. 246 yrs. (including long reversion)	765
Kingsdown-rd., l.g.r. 22*l.* 10s., u.t. 246 yrs., g.r. 9*l.* 9s.	245
Barnsbury.—Grace-st., l.g. rents 80*l.*, u.t. 37 yrs., g.r. 16*l.*	955
Old Ford.—Appian-rd., l.g. rents 106*l.* 4s., u.t. 60 yrs., g.r. 50*l.*	900
Roman-rd., etc., l.g. rents, etc., 95*l.*, u.t. 60 yrs., g.r. 45*l.*	875
Notting Hill.—Portland-rd., etc., l.g. rents 140*l.*, u.t. 18½ yrs., g.r. 30*l.*	1,200
Shoreditch.—27 and 28, Bateman's-row (s.), u.t. 51½ yrs., g.r. 15*l.*, y.r. 84*l.*	430

By WM. HOLLIS.

Finchley. — Waverley-grove, nine freehold building sites	1,480

By MULLETT, BOOKER & Co.

Hyde Park.—94, Westbourne-ter., u.t. 33¾ yrs., g.r. 5*l.*, p.	3,000
140, Westbourne-ter., with stabling, u.t. 45 yrs., g.r. 25*l.*, y.r. 82*l.* 5s.	1,000

By RICHARDSON & HILL.

Herne Hill, Kent.—"Pax's Field" (sand pit), 10 acres, *l.*, p.	805

By STURT & STURT.

Croydon.—97 to 119 (odd), Wentworth-rd., u.t. 93 yrs., g.r. 48*l.*, w.r. 280*l.* 16s.	1,830
Wimbledon.—17, Cromwell-road, u.t. 84½ yrs., g.r. 6*l.* 10s., e.r. 36*l.*	375

July 12.—By CHINNOCK, GALSWORTHY, & Co.

Hyde Park.—Queen's-gdns., f.g. rents 90*l.*, reversion in 49 yrs.	3,005
Queen's-gdns, f.g. rents 90*l.*, reversion in 49 yrs.	2,975

By E. H. HENRY.

Wandsworth.—5, Jeptha-rd., u.t. 79½ yrs., g.r. 8*l.* 10s., w.r. 37*l.* 14s.	260

By NOYS & HOWES.

Sydenham.—58, Newlands-pk., u.t. 76 yrs., g.r. 14*l.*, e.r. 60*l.*	425

By J. C. PLATT.

Hammersmith.—152, Hammersmith-rd., u.t. 33 yrs., g.r. 6*l.* 16s., e.r. 80*l.*	770
Kensington.—84 and 86, St. Dunstan's-rd., u.t. 85½ yrs., g.r. 11*l.*, w.r. 78*l.*	465

By ROGERS, CHAPMAN, & THOMAS.

South Lambeth.—11 and 13, Meadow-rd., u.t. 20½ yrs., g.r. 6*l.*, y.r. 68*l.*	490
Chelsea.—17, Markham-st., u.t. 15 yrs., g.r. 4*l.* 4s., y.r. 34*l.*	200

By BEADEL, WOOD, & Co.

Tolleshunt Knights, Essex.—Enclosures of building land, 29 a. 2 r. 7 p., f.	850
Messing, Essex.—Enclosure of arable land, 8 a. 0 r. 20 p., f.	116
Enclosures of arable and pasture, 70 a. 3 r. 18 p., f.	510
Tolleshunt Knights, etc., Essex.—"Brook Hall Farm," 273 a. 3 r. 5 p., f.	3,000
Tolleshunt Knights, Essex.—The Manor of Brook Hall, with fines, rents, royalties, etc.	370
Great Wigborough, Essex.—The Manor of Great Wigborough with Salcott, with fines, rents, royalties, etc.	£410
Steeple, Essex.—Two blocks of building land, 60 a. 0 r. 25 p., f.	500
A block of pasture land, 23 a. 2 r. 27 p., f.	105
Maldon, Essex.—"Brook Farm," also three enclosures of building and arable land, 53 a. 2 r. 19 p., f.	1,620

July 13.—By BLAKE & DANNATT.

Dulwich.—39, Dunstan's-rd., f., w.r. 23*l.* 8s.	280
1, 3, and 5, Cornflower-ter., f., w.r. 62*l.* 8s.	675
Dunstan's-rd., freehold stabling premises and yard, y.r. 20*l.*	265
12, 14, 16, and 18, Forest Hill-rd. (s.), f., y.r. 171*l.*	2,590
Forest Hill-rd., the "Herne Tavern," u.t. 59½ yrs., g.r 12*l.*, y.r. 100*l.*	1,410
Upland-rd., f.g. rents 26*l.* 5s., reversion in 75 yrs.	700
Charlton.—373, 375, and 429, Woolwich-rd., u.t. 86 yrs., g.r. 14*l.*, w.r. 106*l.* 12s.	675
Greenwich.—15, Queen-st., f., w.r. 14*l.* 6s.	105
Old Kent-road.—22, Upcott-rd. (s.), u.t. 57 yrs., g.r. 2*l.*, y.r. 26*l.*	215

By H. J. BROMLEY.

Norwood.—14, Tennison-rd., u.t. 78 yrs., g.r. 15*l.*, p.	700

By R. L. FREEMAN.

Hampstead.—4, Dynham-rd., u.t. 78 yrs., g.r. 9*l.* 10s., y.r. 45*l.*	530

By FRANK SWAIN.

Kensington.—Tor-gdns., l.g. rents 35*l.*, u.t. 39 yrs.	630

By DOUGLAS, YOUNG & Co.

Tooting.—7 to 12, Stanley-mansions (flats), f., y.r. 305*l.* 16s.	2,850
Brockley.—77, Manor-rd., u.t. 59 yrs., g.r. 7*l.* 10s., y.r. 48*l.*	380

By WYATT & SON (at Chichester).

Chidham, Sussex. — "Easton Farm," 82 a. 2 r. 12 p., f., y.r. 105*l.*	2,427

By N. EASTON & SON (at Hull).

Sutton-on-Hull, Yorks.—A freehold farm, 62¼ acres, y.r. 122*l.*	3,300

By BOYTON, SONS, & BUCKMASTER (at Fulham).

Fulham.—23 to 29 (odd), Protheroe-rd., u.t. 73 yrs., g.r. 20*l.*, w.r. 145*l.* 12s.	775
51, Rowallan-rd., u.t. 93½ yrs., g.r. 6*l.*, w.r. 41*l.* 12s.	305

By D. SMITH, SON, & OAKLEY (at Braintree).

Braintree, Essex.—"Chapel" and "Velliums" farms, 128 a. 0 r. 4 p., f (in one lot)	2,100

July 14.—By B. R. BOSTOCK.

West Ham.—47 to 53 (odd), Rokeby-st., u.t. 65½ yrs., g.r. 14*l.*, w.r. 91*l.*	500

By WM. CLARKSON.

East Ham.—28 to 38 (even), Becket-av., f., w.r. 124*l.* 16s.	1,080
1, 3, and 5, Arragon-rd., f., w.r. 93*l.* 12s.	750

By DEBENHAM, TEWSON, & Co.

Stoke Newington.—42, Mildmay-grove, u.t. 47½ yrs., g.r. 6*l.* 10s., p.	400
7, Milton-rd., u.t. 58 yrs., g.r. 5*l.*, y.r. 36*l.*	310
1 to 4, Thomas-pl., u.t. 14 yrs., g.r. 14*l.*, w.r. 88*l.* 8s.	200
Islington.—25, Halliford-st., u.t. 35½ yrs., g.r. 6*l.*, y.r. 30*l.*	230
Haggerston.—10, 12, and 14, Clarissa-st., u.t. 15½ yrs., g.r. 15*l.*, w.r. 76*l.* 14s.	225
21 and 23, Clarissa-st., u.t. 14½ yrs., g.r. 6*l.*, w.r. 52*l.*	150
Fulham.—61 to 67 (odd), Greyhound-rd., u.t. 74 yrs., g.r. 24*l.*, w.r. 135*l.* 4s.	800
Walthamstow.—81 to 87 (odd), Ritchings-ave., u.t. 82 yrs., g.r. 16*l.*, w.r. 70*l.* 6s.	370

By DRIVERS'.

Holloway.—424 to 434 (even), and 438, Hornsey-rd. (s.), f., y.r. 391*l.*	6,255

By FURBERS'.

Brixton.—1 to 6, Sussex-dwellings (flats), u.t. 62 yrs., g.r. 14*l.*, w.r. 91*l.*	475

By HOLCOMBE, BETTS, & WEST.

South Kensington.—4, Clareville-gr., u.t. 15 yrs., g.r. 6*l.* 15s., y.r. 50*l.*	460
Wandsworth.—37, Ringford-rd., u.t. 74 yrs., g.r. 6*l.*, e.r. 34*l.*	320

By C. C. & T. MOORE.

St. George's East.—12 to 18 (even), Ellen-st., 12A, 12 to 20 (even), Philip-st., 1 and 2, Mary Ann-st., area 8,000 ft., f., w.r. 349*l.* 16s.	3,550
20 to 38 (even), Ellen-st., area 8,400ft., f., w.r. 323*l.* 14s.	3,230
1 to 11, Ellen-pl., 3 to 12, Mary Ann-st., area 15,300 ft., f., w.r. 564*l.* 4s.	5,880
40 and 42, Ellen-st., 2 to 12 (even), Stutfield-st., 13, 14 and 15, Mary Ann-st., area 7,450 ft., f., w.r. 287*l.* 6s.	2,810
16 to 29, Mary Ann-st., 15 to 28, Severne-st., 8 and 10, Philip-st., 14 and 16, Stutfield-st., area 17,300 ft., f., w.r. 861*l.* 18s.	8,470
1 to 14, Severne-st., 6, Philip-st., 19 to 35 (odd), Pinchin-st., 18, 20, and 22, Stutfield-st., area 15,150 ft., f., w.r. 717*l.* 12s.	6,890
27 to 39 (odd), Christian-st., 46 and 48, Ellen-st., 1 to 11 (odd), Stutfield-st., 1 to 4, Queen's-pl., area 9,400 ft., f., w.r. 522*l.* 12s.	4,450

By NEWBON, EDWARDS, & SHEPHARD.

Pimlico.—Charlwood-pl., l.g.r. 48*l.*, u.t. 33 yrs., g.r. 9*l.* (with reversion)	790
Bessborough-st., l.g.r. 36*l.*, u.t. 39 yrs., g.r. 6*l.* (with reversion)	625
Lillington-st., l.g.r. 42*l.*, u.t. 29 yrs., g.r. 6*l.* (with reversion)	600
Ponsonby-pl., l.g.r. 22*l.* 1s., u.t. 39 yrs., g.r. 2*l.* (with reversion)	350
Camden Town.—160, Gt. College-st. (s.), u.t. 17½ yrs., g.r. 4*l.*, y.r. 45*l.*	300
Somers Town.—67, Barclay-st., u.t. 16 yrs., g.r. 4*l.*, y.r. 32*l.*	160
24, Aldenham-st., u.t. 16 yrs., g.r. 3*l.* 10s., y.r. 32*l.*	165
Pentonville.—47, 48, and 49, Warren-st., u.t. 23 yrs., g.r. 12*l.*, y.r. 96*l.*	480
Clapton.—103 to 109 (odd), Rushmore-rd., f., y.r. 120*l.*	1,810

Fulham.—165 and 167, North End-rd., l.u.t. 19½ yrs., g.r. 3*l.* 8s. 6d., y.r. 80*l.* ..... } £610
Hackney.—65, Harrogate-rd., u.t. 39½ yrs., g.r. 4*l.* 4s., y.r. 26*l.* 285
Islington.—9, Charles-st., u.t. 48½ yrs., g.r. 4*l.* 10s., y.r. 36*l.* 355

By A. PREVOST & SON.

Mile End.—124, Stepney-green, u.t. 42 yrs., g.r. 4*l.* 4s., w.r. 59*l.* 16s. 365

By STIMSON & SONS.

Peckham.—158, Queen's-rd., a freehold rental of 30*l.*, reversion in 18 yrs. 990
Islington.—32 and 33, Upper Park-st., f., e.r. 80*l.* 985
Pimlico.—Ranelagh-gr., etc., l.g. rents 92*l.* 10s., u.t. 18½ yrs., g.r. 4*l.* 10s. 1,050
Camden Town.—High-st., l.g. rents 37*l.* 18s., u.t. 7½ yrs., g.r. 15*l.* 150
Brixton.—84 and 86, Arlingford-rd., u.t. 70 yrs., g.r. 16*l.*, p. 830
Clapham.—15, Sibella-rd., u.t. 57 yrs., g.r. 9*l.* 15s., y.r. 55*l.* 645
Camberwell.—15, Knatchbull-rd., u.t. 71 yrs., g.r. 6*l.*, e.r. 50*l.* 470
Canning Town.—31, Randolph-rd., f., w.r. 18*l.* 4s. 170
Walthamstow.—Gosport-rd., l.g. rents 44*l.*, reversion in 93 years 1,000
East Ham.—Rosebery-av., etc., f.g. rents 37*l.*, reversion in 93 years 845

By S. WALKER & SON.

Islington.—6 to 11 and 13, Chapel-st. (s.), u.t. 36½ and 67½ yrs., g.r. 219*l.*, y.r. 558*l.* 16s. 2,170
Warren-st., l.g.r. 62*l.*, u.t. 36½ yrs., g.r. 26*l.* 420

By WALTON & LEE.

Catesby, Northants.—"Catwell Meadows," 29 acres, f., y.r. 30*l.* 700

July 15.—By PRICE, ARROW, & TAYLOR.

Clapham.—14, Lynette-ave., u.t. 80½ yrs., g.r. 11*l.* 11s., y.r. 50*l.* 550

By SLADE & BUTLER.

Pimlico.—35, Cambridge-st., u.t. 22½ yrs., g.r. 7*l.*, e.r. 60*l.* 350

By SLADE & CHURCH.

Croydon.—83, Coombe-rd., f., e.r. 90*l.* 1,180

By WINDRUM & CLEAVE.

Poplar.—23, Ellerthorpe-st., f., y.r. 25*l.* 4s. .. 320
3, Prestage-st., f., w.r. 26*l.* 290
104, Canton-st., f., w.r. 31*l.* 4s. 365
8 and 9, Sussex-st., u.t. 49 yrs., g.r. 25*l.*, w.r. 62*l.* 12s. 510

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beer-house; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

FRIDAY, JULY 22.

Institution of Heating and Ventilating Engineers.—The members will meet at the St. George Hotel at 10 o'clock and visit one of the Atlantic liners, lunching thereafter at the St. George Hotel at 1 o'clock. After lunch there will be a cruise on the river, starting at 2.45.

Institution of Mechanical Engineers.—Ordinary General Meeting. Mr. Edward G. Hillyer on "Design and Test of a Modern Steam-Power Plant."

Junior Institution of Engineers.—Visit to Messrs. Bryant and May's Match Manufactory, Fairfield Works, Fairfield-road, Bow. Train, with carriages reserved for members, leaves Fenchurch-street at 2.50 p.m.

SATURDAY, JULY 23.

Architectural Association.—Visit to Hatfield House.

WEDNESDAY, JULY 27.

Incorporated Association of Municipal and County Engineers.—Scottish District Meeting, to be held at Glasgow.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks.	1 16 0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1 13 0	" " "
Facing Stocks ...	2 12 0	" " "
Shippers	2 10 0	" " "
Flettons	1 10 0	" at railway depôt
Red Wire Cuts ...	1 13 0	" " "
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire ...	4 4 0	" " "
Do. Bullnose	4 10 0	" " "
Best Stourbridge Fire Bricks.....	4 8 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	13 0 0	" " "
Headers	12 0 0	" " "
Quoins, Bullnose, and Flats.....	17 0 0	" " "
Double Stretchers	19 0 0	" " "
Double Headers...	16 0	" " "

BRICKS, &c. (*continued*).

	£ s. d.	
One Side and two Ends	19 0 0	per 1000 at railway depot.
Two Sides and one End	20 0 0	" " "
Splays, Chamferred, Squints	20 0 0	" " "
Best Dipped Salt Glazed Stretchers, and Header	12 0 0	" " "
Quoins, Bullnose, and Flats.....	14 0 0	" " "
Double Stretchers	15 0 0	" " "
Double Headers...	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
Splays, Chamferred, Squints	14 0 0	" " "
Second Quality White and Dipped Salt Glazed	2 0 0	" less than best.

	s. d.	
Thames and Pit Sand.....	7 3	per yard, delivered.
Thames Ballast.....	6 0	" "
Best Portland Cement	30 0	per ton, "
Best Ground Blue Lias Lime	21 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 6d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2 1	" "
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2 2½	" "

	s. d.	
Ancaster in blocks.....	1 11	per ft. cube, deld. rly. depôt.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks...	2 4	" "
Red Corsehill "	2 5	" "
CloseburnRedFreestone	2 0	" "
Red Mansfield "	2 4	" "
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks	2 10	" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides (slabs random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "
Hopton Wood (Hard Bed)	in blocks	2 3 per ft. cube. deld. rly. depôt
" " "	6 in. sawn both sides landings	2 7 per ft. super. deld. rly. depôt
" " "	3 in. do.	1 2½ " "

SLATES.

in. in.	£ s. d.	
20 × 10 best blue Bangor	13 2 6	per 1000 of 1200 at r. d.
20 × 12 " "	13 17 6	" "
20 × 10 first quality "	13 0 0	" "
20 × 12 " " "	13 15 0	" "
16 × 8 " " "	7 5 0	" "
20 × 10 best blue Portmadoc	12 12 6	" "
16 × 8 " "	6 12 6	" "
20 × 10 best Eureka unfading green .	15 17 6	" "
20 × 12 " "	18 7 6	" "
18 × 10 " "	13 5 0	" "
16 × 8 " "	10 5 0	" "
20 × 10 permanent green	11 12 6	" "
18 × 10 " "	9 12 6	" "
16 × 8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles .	42 0	per 1000 at rly. depôt.
Hip and Valley tiles ...	3 7	per doz. " "
Best Broseley tiles.....	50 0	per 1000 " "
Do. Ornamental tiles	52 6	" " "
Hip and Valley tiles ...	4 0	per doz. " "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 " "
Do. Ornamental do	60 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 0	" " "
Best Red or Mottled Stafford shire do. (Peakes).....	51 9	per 1000 " "
Do. Ornamental do.....	54 6	" " "
Hip tiles	4 1	per doz. " "
Valley tiles	3 8	" " "
Best "Rosemary" brand plain tiles.....	48 0	per 1000 " "
Best Ornamental tiles	50 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 8	" " "
Best "Hartshill" brand plain tiles, sand faced.	50 0	per 1000 " "
Do. pressed.....	47 6	" " "

TILES (*continued*).

	s. d.	
Do. Ornamental do	50 0	per 1000 at rly. depot.
Hip tiles	4 0	per doz. " "
Valley tiles	3 6	" " "

WOOD.

	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	15 10 0	16 10 0
Deals: best 3 by 4.....	14 10 0	15 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6 ..	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best
Battens: seconds	0 10 0	" " "
2 in. by 4 in. and 2 in. by 6 in....	9 0 0	9 10 0
2 in. by 4½ in. and 2 in. by 5 in....	8 10 0	9 10 0
Foreign Sawn Boards—		
1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
	At per load of 50 ft.	
Fir timber: best middling Danzig or Memel (average specification)	4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.) ...	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 15 0	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in	23 0 0	24 0 0
3 in. by 9 in.	21 0 0	22 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0	18 10 0
Second yellow deals, 3 in. by 11 in.....	18 10 0	20 0 0
" " 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.....	18 0 0	19 10 0
Battens.....	13 10 0	15 0 0
Second yellow deals, 3 in. by in.	16 0 0	17 0 0
Do. 3 in. by 9 in.....	14 10 0	16 0 0
Battens.....	11 0 0	12 10 0
yellow deals, 3 in. by in.	13 10 0	14 0 0
Do. 3 in. by 9 in.....	13 0 0	14 0 0
Battens.....	10 0 0	11 0 0
White Sea and Petersburg :—		
First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 10 0	14 10 0
Battens.....	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
" " 3 in. by 9 in.	12 10 0	13 10 0
" " battens	9 10 0	10 10 0
Pitch-pine: deals.....	16 10 0	20 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	35 0 0	upwards.
Oddments	24 0 0	26 0 0
Seconds, regular sizes.....	26 10 0	28 10 0
Yellow Pine oddments	22 0 0	24 0 0
Kauri Pine—Planks, per ft. cube .	0 3 6	0 5 0
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 2 6	0 3 6
Small " "	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube.	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 7	0 0 8
¾ in. do. do.	0 0 6½	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch ...	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	21 0 0
American Whitewood Planks, per ft. cube.....	0 4 0	—
Prepared Flooring—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 13 0	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. do. do.	0 14 0	0 18 0
¾ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 11 6	0 13 6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0 ...	7 5 0
Compound Girders, ordinary sections	8 2 6 ...	9 5 0
Angles, Tees and Channels, ordinary sections	7 17 6 ...	8 17 0
Flitch Plates	8 5 0 ...	8 15 0
Cast Iron Columns and Stanchions including ordinary patterns...	7 2 6 ...	8 5 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	7 5 0 ...	7 15 0
Staffordshire Crown Bars, good merchant quality.....	7 15 0 ...	8 5 0
Staffordshire "Marked Bars"	10 0 0 ...	—
Mild Steel Bars.....	8 15 0 ...	9 5 0
Hoop Iron, basis price	9 5 0 ...	9 10 0
" " Galvanized	17 10 0 ...	—
(*And upwards, according to size and gauge.)		
Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 15 0 ...	—
" " 24 g.	10 15 0 ...	—
" " 26 g.	12 5 0 ...	—

METALS—(continued).	Per ton, in London. £ s. d.		£ s. d.
Sheet Iron, Galvanised, flat, ordinary quality—			
Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12 15 0	...	—
Ordinary sizes to 22 g. and 24 g. 26 g.	13 5 0	...	—
Sheet Iron, Galvanised, flat, best quality—	14 5 0	...	—
Ordinary sizes to 20 g.	16 0 0	...	—
" " 22 g. and 24 g.	16 10 0	...	—
" " 26 g.	18 0 0	...	—
Galvanised Corrugated Sheets—			
Ordinary sizes 6 ft. to 8 ft. 20 g.	12 10 0	...	—
" " 22 g. and 24 g.	13 0 0	...	—
" " 26 g.	13 15 0	...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 15 0	...	—
Best Soft Steel Sheets, 22 g. & 24 g.	12 15 0	...	—
26 g.	14 0 0	...	—
Cut nails, 3 in. to 6 in.	9 0 0	...	9 10 0
(Under 3 in., usual trade extras.)			

LEAD, &c.	Per ton, in London. £ s. d.		£ s. d.
Lead—Sheet, English, 3lb. and up	14 2 6	...	—
Pipe in coils	14 12 6	...	—
Soil pipe	17 2 6	...	—
Compo pipe	17 2 6	...	—
Zinc—Sheet—			
Vieille Montagne ....ton	27 0 0	...	—
Silesian	26 15 0	...	—
Copper—			
Strong Sheet ....per lb.	0 0 10½	...	—
Thin " .... "	0 0 11½	...	—
Copper nails .... "	0 0 11	...	—
Brass—			
Strong Sheet .... "	0 0 10	...	—
Thin " .... "	0 0 11	...	—
Tin—English Ingots .... "	0 1 3½	...	—
Solder—Plumbers' .... "	0 0 6½	...	—
Tinmen's .... "	0 0 8	...	—
Blowpipe .... "	0 0 9	...	—

ENGLISH SHEET GLASS IN CRATES.	
15 oz. thirds	2¾d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	3½d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3¼d. " "
32 oz. thirds	5d. " "
" fourths	4¼d. " "
Fluted Sheet, 15 oz.	3d. " "
" 21 oz.	4d. " "
Harley's Rolled Plate	1¾d. " "
" " " "	1¾d. " "
" " " "	2¾d. " "

OILS, &c.		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 1 6
" " " in barrels	"	0 1 7
" " " in drums	"	0 1 9
Boiled " " in pipes	"	0 1 8
" " " in barrels	"	0 1 9
" " " in drums	"	0 2 0
Turpentine, in barrels	"	0 3 6
" in drums	"	0 3 8
Genuine Ground English White Lead	per ton	18 15 0
Red Lead, Dry	"	18 10 0
Best Linseed Oil Putty	per cwt.	0 6 6
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Ezpbell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TO CORRESPONDENTS.

T. and F.—S. M. (Amounts should have been stated).—C. E. (Below our limit.)

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, manuscripts, or other documents sent to or left at this office, unless he has specially asked for them.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ACOMB (York).—For erecting a villa residence, Carr-lane, for Mr. W. M. Holmes. Mr. M. W. Lewis, architect and surveyor, 194, Bishopthorpe-road, York. Quantities by architect:—

Bricklayer: H. Turner, Lawrence-street, York	£243 16 0
Joiner and Carpenter: H. J. England, Park-grove, York	227 10 10½
Mason: J. Swalwell, Clarence-street, York	45 10 0
Slater: J. Hardgreaves, Skeldergate, York	34 17 0
Plasterer: I. Young, Gillygate, York	115 0 0
Plumber: T. Atherley, Bootham, York	104 17 5
Painter: J. Dodsworth, Micklegate, York	22 5 0

ALLERTON.—For the erection of a detached residence. Mr. F. Holland, engineer and architect, 11, Parkinson's-chambers, Hustlergate, Bradford:—

Masons: Phineas, Drake, & Sons, Allerton-road, Bradford	£2,100
Carpenters and Joiners: J. Cockroft & Co., Allerton, Bradford	748
Plumber: R. Townend, Croft-street, Bradford	520
Slater: G. Wilkinson, Burnett-avenue, Bradford	132
Painter: S. Cockroft, Allerton, Bradford	29
Heating Engineer: R. Townend, Croft-street, Bradford	140

ASHBY-BY-BRIGG (Lincolnshire).—For additions to elementary schools, for the Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln. Quantities by architects:—

A. Watson	£2,233 0 0	W. Pallister	£1,750 0 0
H. J. Thompson	1,919 19 0	G. R. Usher	1,745 0 0
Mawes Bros.	1,838 2 10	F. Scarborough, Lincoln*	1,684 0 0
H. S. Brown	1,827 0 0		

ASHBY PUERORUM.—For additions to Elementary School at Ashby Puerorum, near Horncastle, for the Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln. Quantities by architects:—

K. Miller	£156	Hensman Bros., Horncastle*	£141

BLACKWOOD (Mon.).—For new Primitive Methodist Chapel, for the Trustees. Mr. R. L. Roberts, architect, Abercarn. Quantities by architect:—

J. Dean & Son	£1,437 12 0	E. Williams	£1,175 0 0
Passmore & Perkins	1,400 0 0	H. Rees, Blackwood*	1,120 0 0

BOLLOW (Gloucestershire).—For constructing a new sea wall, about 583 yards in length, for the Commissioners of Sewers for the Lower Level of the county of Gloucester. Mr. G. W. Keiling, engineer, 10, Lansdown-terrace, Cheltenham:—

J. Smith	£328 11 5	A. Jefferies, Walmore Hill, nr. Gloucester*	£245 19 0
G. Griffiths	309 12 9		
G. Griffiths	272 12 10		
C. Leach	270 0 0		

BRAMFIELD.—For enlarging infants' room and building entrance porch and cloakroom, for the Managers of Bramfield (Non-provided) School. Mr. Arthur Peila, architect, Beccles:—

W. Ellis	£260 0	Woodyard	£212 0
Martin	224 0	Saunders & Son, Halesworth*	165 0
Marsden	223 12		

BURY ST. EDMUNDS.—For residence, Fornham-road, for Mrs. Sherwood. Mr. H. Steward-Watling, F.S.A. architect, and Messrs. Arthur Rutter & Sons, Cambridge, and Bury St. Edmunds:—

H. Linzell	£1,600	F. Tooke, Bury St. Edmunds*	£1,150
Hinnels & Son	1,350		

CAMBRIDGE.—For residence, Millington-road, for Mrs. Drysdale. Mr. H. Steward-Watling, F.S.A. architect, and Messrs. Arthur Rutter & Sons, Cambridge and Bury St. Edmunds:—

Hinnels & Son	£1,200	Oak Building Co., Ltd., Cambridge, Colchester*	£960
H. Linzell	1,140		

CHATHAM.—For the supply of 955 cubic yards of 2½-in. flints, for the Town Council. Mr. C. Day, Borough Surveyor, Town Hall, Chatham:—

	Per cubic yard.
180 *cubic yards of Flints on Herbert-road.*	s. d.
F. & S. Auger, Chatham	4 10
100 *cubic yards of Flints on Leopold-road.*	
F. & S. Auger, Chatham	4 10
625 *cubic yards of Flints on Glencoe-road.*	
W. J. Auger, Chatham	4 9
50 *cubic yards of Flints on Sturla-road (top portion).*	
R. D. Batchelor, Chatham	4 9

CHURCH STRETTON.—For manhole and culverting, for the Urban District Council. Mr. S. Gingell Jones, surveyor, 26, Castle-street, Shrewsbury:—

C. Harris, Shrewsbury	£107

DOVERCOURT.—For residence, Kingsway, for Mr. Swanders. Mr. H. Steward-Watling, F.S.A., architect, and Messrs. Arthur Rutter & Sons, Cambridge, and Bury St. Edmunds:—

E. Sawnders, Hill Crest Works, Dovercourt*	At per schedule of prices.

KEASDEN.—For water supply works, for Settle Rural District Council. Mr. T. A. Foxcroft, Engineer and Surveyor, Town Hall, Settle:—

	Contract No. 1. Pipe Laying, etc.	Contract No. 2. Reservoirs and Collecting Wells, etc.
E. Taylor	£1,638 8 3	£398 0 9
A. Dickinson	1,000 5 7	267 11 9
W. D. Simmons & Sons	889 8 4	340 14 3
A. & C. Harris	729 15 10	201 8 8
T. Cook Starkey	683 7 8	276 2 9
Newsholme & Winder	648 11 10	311 17 1
Barker Bros.	633 8 4	262 9 1
Tattersall & Earnshaw	584 5 6	— — —
Brassington Bros. & Comey	472 17 11	245 7 2
Bushby Bros.	439 16 6	337 5 6
C. M. Slinger	428 18 8	254 18 8
Cumberland Bros., Bentham*	291 16 2	161 16 0

KELLING.—For farm buildings, Kelling, Norfolk. Mr. T. Inglis Goldie, architect and surveyor, Bank-buildings, Bank Plain, Norwich:—

J. W. Weston	£442 13 0	H. Bullen	£295 0 0
R. Chapman	355 0 0	W. Rush*	271 7 8
C. A. Sadler	343 0 0		

LLANSILIN (Oswestry).—For repairs, alterations, and additions to buildings at Ty-Ucha, for the Town Council. Mr. G. W. Lacey, Borough Engineer and Surveyor, Guildhall, Oswestry. Quantities by Borough Engineer:—

J. E. Morgan Jones	£294 9 6	J. Higgins, Oswestry*	£137 0 0
Jones & Evans	148 15 6		

For an iron Dutch barn of six bays at Ty-Ucha.

J. E. Morgan Jones	£111 10 0	E. Thomas & Co.	£78 4 9
Clay & Davies	82 0 0	R. J. Roberts, Oswestry*	71 19 4

LONDON.—For erecting an operating-room, etc., at Infirmary, St. Dunstan's-road, Fulham Palace-road, W., for the Fulham Guardians. Mr. A. Saxon Snell, architect, 22, Southampton-buildings, Chancery-lane, W.C. Quantities by Mr. W. T. Patten:—

C. Dearing & Son	£1,389 0	Mattock & Parsons	£1,091 0
Cowley & Drake	1,173 16	T. G. Minter	1,065 0
Martin Wells, & Co., Ltd.	1,167 0	T. Bendon, 48, Chancellors-rd., Hammersmith*	1,033 0
Alphheather	1,162 0		
Simpson & Co.	1,160 0		

LONDON.—For extensions to the Town Hall, Harwood-road, Fulham, for the Borough Council. Mr. Francis Wood, Borough Engineer, Town Hall, Fulham. Quantities by Mr. T. Woodbridge Biggs, 10, Clifford's-inn, Temple Bar, E.C.:—

F. G. Minter, Ferry Works, Putney*	£22,172

LONDON.—For Magirus' turntable long ladders, for the London County Council:—

J. Morris & Sons*	£675

LONDON.—For the reconstruction of the bridge carrying Kingsland-road over the North London Railway near Dalston Junction, for the London County Council:—

Pedrette & Co.	£14,250 0 6
Muirhead, Greig, & Matthews	13,749 12 6
M. Dinnie	13,086 19 8
J. Bentley	12,348 16 0
Wilkinson Bros.	12,337 0 0
A. Fasey & Son	11,921 9 9
Motherwell Bridge Co., Ltd.	11,664 0 6
Heenan & Froude, Ltd., Manchester*	11,450 12 3

[The amount of the Chief Engineer's estimate of the cost of the work was £12,317 5s. 6d.]

LONDON.—For 1,000 hydrant indicator tablets, for the London County Council:—

S. Pontifex & Co.*	£120

LONDON.—For the renewal of the gearing of the penstocks at the outlets of the Essex-street, Norfolk-street, and Savoy-street sewers into the River Thames, for the London County Council:—

Goddard, Massey, & Warner	£252 14 6
Hunter & English	225 0 0
Glenfield & Kennedy	212 0 0
G. Waller & Sons	195 0 0
Blakeborough & Sons	195 0 0
Flavell & Churchill, London*	185 0 0

LONDON.—For the supply and fixing of cases on handrails in a portion of the south gallery of the Horniman Museum, for the London County Council:—

W. Ford & Co.*	£117 7 0

LONDON.—For the execution of certain works at No. 18, Lancing-street, St. Pancras, for the London County Council:—

R. Harding & Sons	£400	T. Lapthorne & Co., London*	£269
Barlow & Roberts	310		

LONDON.—For provision of additional electric cables, for the London County Council:—

The British Insulated and Helsby Cables, Ltd., at prices 7½ per cent. above those specified in the contract entered into with the company.*

LONDON.—For works at Eagle Wharf, Narrow-street, for the Stepney Borough Council:—

Parrot & Isom	£1,537 17 6	Harris & Wardrop	£1,065 0 0
F. & F. Wood	1,185 0 0	Bate Bros.	1,020 0 0
W. G. Brown	1,142 0 0	Watts, Johnson, & Co., Burdett Wharf, Limehouse*	947 0 0
A. Kendall	1,112 0 0		
W. S. & A. T. Johnson	1,093 0 0		
Calnan & Sons	1,077 0 6		

TENDERS—*Continued on page 109.*

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITION.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
*Additions to Workhouse at Hillingdon East	Uxbridge Union	See Advertisement this Week's Issue	Oct. 1

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tenders, etc., supplied by	Tenders to be Delivered
Painting Iron Buildings, Isolation Hospital, Ottershaw	Joint Committee of Management	H. E. Paine, Clerk, 80, Guildford-street, Chertsey	July 25
Pits Under Car Tracks, Queen's-rd. Car Shed, Cheetham	Manchester Tramways Committee	J. H. M'Elroy, 55, Piccadilly, Manchester	do.
6-in. Best Lonkey Setts	Radcliffe U.D.C.	Surveyor, Council Offices, Radcliffe	do.
Two Road Motors	Cardiff Corporation	Mr. Woosey, Town Hall, Cardiff	do.
Workmen's Dwellings, Walker-rd. & St. Lawrence-rd.	Newcastle-on-Tyne Corporation	City Property Surveyor's Office, Town Hall, Newcastle-on-Tyne	do.
Sewage Disposal Works, Wheeldon Mill, Brimington	Chesterfield R.D.C.	E. Lines, Engineer, Union Offices, Chesterfield	do.
Repairing Roof of Town Hall, Tuam	Tuam Town Commissioners	J. Glynn, Town Clerk, Town Hall, Tuam	do.
Sanitary Utensils, etc.	Oulton Broad U.D.C.	C. G. Taylor, Clerk, Waveney-chambers, Lowestoft	do.
Surgery and Dwelling-House, Park-place, Tredegar		W. S. Williams, Architect, Tredegar	do.
800 yds. of Sewers	Richmond (Surrey) Town Council	J. H. Brierley, Borough Surveyor, Town Hall, Richmond	do.
Manual Instruction Centre at Greenbank, St. George	Bristol Education Committee	F. Bligh Bond, Arch., Star Life Bldgs, St. Augustine's-pa., Bristol	do.
Roadworks, Harpurhey	Manchester Paving, etc., Committee	Paving, etc., Depart. (Surveyor's Office), Town Hall, Manchester	do.
do. Moston	do.	do.	do.
do. Crumpsall	do.	do.	do.
do. Cheetham	do.	do.	do.
do. Openshaw	do.	do.	do.
do. Bradford	do.	do.	do.
do. Clayton	do.	do.	do.
do. Ardwick	do.	do.	do.
do. West Gorton	do.	do.	do.
do. Fallowfield	do.	do.	do.
do. Rusholme	do.	do.	do.
do. Chorlton-on-Medlock	do.	do.	do.
Alterations, etc., to Council Schools	Ebbw Vale Education Committee	H. Waters, Architect, Beaufort	do.
1,300 Tons of Granite	Tonbridge U.D.C.	W. Laurence Bradley, Surveyor, Tonbridge Castle, Kent	do.
Stores and Materials	Thompson, Mackay, & Co., Ltd.	Mr. Warburton, 2, Ducie-street, London-road, Manchester	July 26
Goods and Materials	Horwich U.D.C.	P. Taberner, Clerk, Council Offices, Horwich	do.
Ventilation, Board Room, etc., Granelly Hill Workho.	Aston Guardians	Whitwell & Son, Architects, Temple-row, Birmingham	do.
Square Lanterns	Glasgow Corporation	Office of Inspector, 52, College-street, Glasgow	do.
Repairs, etc., to Cowhouse and Farm Buildings	Visiting Committee, Brighton Asyl.	J. G. Gibbons, F.R.I.B.A., 3, Palace-place, Brighton	do.
Painting, etc., Male Ward No. 6, Hayward's Heath	do.	do.	do.
Tar Paving	Bromley Borough Council	F. H. Norman, Town Clerk, Municipal Offices, Bromley, Kent	do.
15-kilowatt Electric Light Installation	do.	Office of the Borough Engineer, Municipal Offices, Bromley	do.
Float Valves and Sluices	Derwent Valley Water Board	E. Sandeman, Engineer's Office, Bamford, via Sheffield	do.
20,000 Tons of English Portland Cement	do.	do.	do.
130 Five-Ampere Arc Lamps	Walthamstow U.D.C.	J. Enright, 68, Lincoln's-inn-fields, W.C.	do.
Water Tank, Haine Hospital	Isle of Thanet Joint Hospital Board	H. B. Langham, 22, Queen-street, Ramsgate	do.
Drainage, etc., of Playgrounds, Bushey, Herts	Managers, Boys' British School	W. H. Syme, F.R.I.B.A., 4, High-street, Watford	do.
Playshed	do.	do.	do.
*Wood Paving in Malvern-road, Kilburn	Willesden D.C.	Engineer to the Council, Public Offices, Dyne-road, Kilburn, N.W.	do.
*Roadmkg., etc., Wellington-st., Ch'berlayne Wood-rd.	do.	do.	do.
Infants' School, etc., Cwmsyflog, near New Tredegar	Bedwellty School Board	James & Morgan, Architects, Charles-street-chambers, Cardiff	July 27
Painting, etc., St. Michael's-street, etc., Schools	Shrewsbury Education Committee	Borough Surveyor, The Square, Shrewsbury	do.
Steel Bull-headed Rails	East India Railway Co.	C. W. Young, Secretary, Nicholas-lane, London, E.C.	do.
Electric Motor	Islington Borough Council	Electrical Engineer, 50, Eden-grove, Holloway	do.
Three Sets of Tail Rods, etc.	do.	do.	do.
Trial Borings, Western District Main Outfall Sewer	Cardiff Corporation	W. Harpur, Borough Engineer, Town Hall, Cardiff	do.
Painting Children's Homes, Goldie Leigh, Plumstead	Woolwich Guardians	T. Cutter, 30, Rectory-place, Woolwich	do.
Extension of County Court-house, Downpatrick	Down County Council	R. MacIlwaine, Secretary, Courthouse, Downpatrick	do.
Forming, etc., Roads, Cwmneol Estate, Cwmaman	Aberneol Building Co.	J. Llewellin Smith & Davies, Architects and Surveyors, Aberdare	do.
Laying Surface Drains, Cwmneol Estate, Cwmaman	do.	do.	do.
Building Retaining Walls	do.	do.	do.
Hospital, Nairn		W. Mackintosh, Architect, Inverness	do.
Four Dwelling-houses at Church-street, Newlyn	Mr. Brighton	H. Madden, Architect, 13, Clarence-street, Penzance	do.
*Supply of Broken Granite, Gravel, and Hoggin	Barnet U.D.C.		do.
Flagging and Paving, Seaford-road Estate	Salford Health Committee	Borough Engineer, Town Hall Salford	July 28
Furniture, Hyde-road Temporary Council School	Gorton Education Committee	W. A. Clegg, Secretary, Town Hall, Gorton	do.
Shop, Warehouse, and Stable	Senghenith Indus. Co-operative Soc.	Secretary's House, Aber-road, Senghenith	do.
Three Labourers' Cottages, Ballymacreevan	Antrim R.D.C.	J. Clark, Clerk, Union Offices, Antrim, Ireland	do.
Two Labourers' Cottages, Ballyclan, Crumlin	do.	do.	do.
Four Labourers' Cottages, Moneynick, Randalstown	do.	do.	do.
Two Labourers' Cottages, Creegan, Randalstown	do.	do.	do.
Two Labourers' Cottages, Cranfield, Randalstown	do.	do.	do.
Three Labourers' Cottages, Annaghmore, Toomebridge	do.	do.	do.
Four Labourers' Cottages, Portler, Toomebridge	do.	do.	do.
Four Dwelling-houses at Colnebridge	do.	do.	do.
462 yds. of Iron Fencing for New Cemetery		J. Berry, Architect, 3, Market-place, Huddersfield	do.
Roadworks, Occupation-road, S. Ealing	Gillingham Corporation	Borough Surveyors' Office, Gillingham, Kent	do.
Outfall Sewer, etc.	Ealing Town Council	C. Jones, Borough Engineer, Town Hall, Ealing	do.
800 cubic yds. of Thames Shingle, etc.	do.	do.	do.
Pumps at Sewage Works, Chorlton-Cum-Hardy	Paddington Borough Council	E. B. B. Newton, Borough Surveyor, Town Hall, Paddington, W.	July 29
Porter's Lodge, Chapel, etc., Tame-street, Ancoats	Withington U.D.C.	A. H. Mountain, Eng. & Sur., Town Hall, W. Didsbury, nr. M'chester	do.
Flagging, Paving, etc., Goldsworthy-road, Flixton	Manchester Joint Workhouse Com.	A. J. Murgatroyd, Architect, 23, Strutt-street, Manchester	do.
do. Whitelake-avenue, Flixton	Barton-on-Irwell R.D.C.	Mr. Meadowcroft, Surveyor, Union Offices, Patricroft	do.
Alterations, etc., to Premises, Finkle-street, Kendal	do.	do.	do.
Open-air Sea-water Bath, Aber Foreshore	Co-operative Society	J. Thompson, A.R.I.B.A., 1, Finkle-street, Kendal	do.
*New Coastguard Buildings at Blatchington	Carnarvon Corporation	Borough Surveyors' Office, Guildhall	do.
Closets and Urinals, Parr Hall	Admiralty	Works Depart., Admiralty Office, 21, Northumberland-avenue, W.C.	do.
Porter's Lodge, Isolation Hospital, East Malling	Parr Hall Committee, Warrington	T. Longdin, Borough Engineer, Warrington	July 30
Primitive Meth. Ch., New Kyo, near Armfield Plain	Malling R.D.C.	F. J. Allison, Clerk, Council Offices, West Malling	do.
Pulling Down, etc., Cottages, Assembly Hall site		T. E. Crossling, Architect, Front-st., Stanley, R.S.O., Co. Durham	do.
Works of Main Drainage (Section 1)	Ancient Ord. of Foresters, Debenham	R. C. Wrinch, Architect, Museum-street, Ipswich	do.
Works of Main Drainage (Section 2)	Harrogate Corporation	E. W. Dixon, Engineer, 5, Prospect-crescent, Harrogate	do.
Eleven Labourers' Cottages, Carrowdore	do.	do.	do.
One Labourer's Cottage, Comber	Newtownards R.D.C.	J. Colville, Clerk, Union Workhouse, Newtownards, Ireland	do.
Two Labourers' Cottages, Donaghadee	do.	do.	do.
Three Labourers' Cottages, Kilmood	do.	do.	do.
Two Labourers' Cottages, Kircubbin	do.	do.	do.
Five Labourers' Cottages, Tullynakill	do.	do.	do.
Condensing Plant	do.	do.	do.
Scavenging	Dover Corporation	L. W. Woodman, Borough Electrical Engineer, Park-st., Dover	do.
Library and Hall at Hatton of Cruden, Scotland	Monk Bretton U.D.C.	A. Shaw, Inspector of Nuisances, Monk Bretton	do.
Chapel, Penywain Congregational Church		W. Davidson, Architect, Ellon	do.
60 Tons of Blue Guernsey Granite Spalls		G. Lloyd, 22, Victoria-street, Cwmbran, R.S.O.	do.
2,171 yds. of Sewer, etc., at Crossgates	Romford Guardians	W. Smith, Clerk, Romford	Aug. 1
	Dunfermline District Committee	D. Mackenzie, C.E., County-buildings, Dunfermline	Aug. 2

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
Furnishing Union Infirmary	Chesterfield Guardians	R. J. Barradell, Master of Workhouse, Chesterfield	Aug. 3
Paving, etc., Cambridge-road, etc., Hove	Hove Corporation	H. H. Scott, Borough Surveyor, Town Hall, Hove	do.
90 Tons of Oil	Accrington Dis. Gas & Water Board	C. Harrison, St. James'-street, Accrington	do.
Pumping Chmbr., Walls, etc., at Brewery, Mortlake	Watney, Coombe, Reid & Co., Ltd.	W. Fairley, C.E., 69, Victoria-street, Westminster	do.
Heating and Domestic Water Supply at Sanatorium	Blackpool Sanitary Committee	J. S. Brodie, Borough Engineer, Town Hall, Blackpool	do.
Footpath over Ferrymoor Common	.....	Mr. Dixon's, Grimethorpe Hotel	do.
Sewer Construction (three years)	Leeds Corporation	T. Hewson, City Engineer, Municipal-buildings, Leeds	Aug. 4
Laying Kerbstones (three years)	do.	do.	do.
Rebuilding Torr Bdge, Yealmpton & Newton Ferrers	Devon County Council	Office of Council, The Castle, Exeter	do.
*New Coastguard Buildings at Jury's Gap, Sussex	Admiralty	Works Depart., Admiralty Office, 21, Northumberland-avenue, W.C.	Aug. 5
Arching 160 yds. Main Heading, Brynteg Colliery	.....	Evans & Bevan, Colliery Proprietors, Neath	do.
Two Timber Spar Groynes	Lowestoft Town Council	G. H. Hamby, Borough Engineer, Town Hall, Lowestoft	Aug. 6
Dwellings, Montgomery and Purdon Streets areas	Dublin Health Committee	City Treasurer, Municipal-buildings, Cork Hill, Dublin	do.
Repairs to Southease Bridge	Newhaven Har. & Ouse Low. Naviga.	F. Holman, Clerk, 86, High-street, Lewes	Aug. 8
*Add. to Kent County Lunatic Asylum, Barming Heath	Kent County Asylums Committee	W. J. Jennings, 4, St. Margaret-street, Canterbury	do.
Fire Appliances, East Riding Asylum, Beverley	Visiting Committee	Maxted, Knott, & Coles, Engrs., Burnett-avenue, High-st., Hull	Aug. 9
Sewage Tanks and Filters	Macclesfield Corporation	R. E. W. Berrington, Engineer, Bank-buildings, Wolverhampton	Aug. 10
Cleaning, Painting, etc., Nurses' Home Buildings	Whiston (Prescot) Guardians	J. Gandy, Architect, Masonic-chambers, St. Helens	do.
Villa at Drumgooland, Co. Down	.....	W. J. Fennell, Architect, 2, Wellington-place, Belfast	Aug. 11
Steam Alternator	Plymouth Corporation	E. G. O'Kell, Borough Electrical Engineer, Prince-rd., Plymouth	Aug. 13
Lancashire Boilers, etc.	do.	do.	Aug. 15
Fire Brigade Appliances	Carshalton U.D.C.	W. W. Gale, Surveyor, Council Offices, High-street, Carshalton	do.
*Construction, etc., 4¼ miles of route length of Tramways	Perth Corporation	Town Clerk, City-chambers, Perth	do.
Permanent Way and Paving	Perth Corporation	J. Begg, Town Clerk, City Chambers, Perth	Aug. 16
Overhead Equipment	do.	do.	do.
Cables, Ducts, &c.	do.	do.	do.
Cars and Equipments	do.	do.	do.
Car Depôt Building	do.	do.	do.
Bell Tower, Cloughjordan, Co. Tipperary	.....	Parochial House	do.
*Extension of Herring Basin	Great Eastern Ry. Co.	Company's Engineer, Liverpool-street Station, E.C.	Aug. 20
Wool Warehouse, Denton Holme	Mr. J. Atkinson	Johnstone Bros., Architects, 39, Lowther-street, Carlisle	Sept. 2
Alterations to Premises, Salisbury-road, Carlisle	.....	J. Fisher, 25, Willow-lane, Lancaster	No date
Taking Down Premises (Pontypridd New Station)	Taff Vale Railway Co.	Engineer to Company, Queen-street, Cardiff	do.
Vicarage, House, and Stable, Thorp Arch, near Leeds	Rev. C. E. Medhurst, M.A.	Oliver & Dodgshun, Architects, 18, Park-row, Leeds	do.
Sinking Well Shaft, near Tadcaster	.....	Bromet & Thorman, Architects, Tadcaster	do.
House, Forest Moor-road, Harrogate	Mr. C. E. Wray	Bolshaw & Stevens, Architects, 1, Prince's-street, Harrogate	do.
Engineering Shops	Hunslet Engine Co., Ltd.	A. Neill & Son, Architects, 38, Park-row, Leeds	do.
Bridge over the Kym	Kimbolton (Hunts) Parish Council	Blackwell & Thomson, Architects, 53, High-street, Kettering	do.
Wesleyan Chapel, Beighton, near Sheffield	.....	W. Cecil Jackson, Architect, 29, Knifesmith-gate, Chesterfield	do.
Drinking Fountain, Camberley	Gen. Abbot Anderson Memorial	Col. H. Pritchard, Camberley	do.
Roads and Sewers, Kensington Park Estate, Bridlington	.....	Burges & Sloan's, Ghyston-buildings, Marsh-street, Bristol	do.
Achindrean Farmsteading, Braemore, Ullapool	.....	W. L. Carruthers, Architect, 22, Queen's-gate, Inverness	do.
Culvert, Road, etc., Birdsfield, Hamilton	.....	W. Robertson, Engineer, 121, St. Vincent-street, Glasgow	do.
*Rebuilding Nos. 43 and 45, Above Bar, Southampton	" Hampshire Advertiser " Co., Ltd.	W. B. Hill, Architect, 81, Above Bar, Southampton	do.
Factory, Long Eaton	.....	E. R. Ridgway, Architect, Long Eaton	do.
Storage Tank, New Mills	Hayfield Guardians	Garlick & Flint, Architects and Surveyors, Buxton	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*Resident Electrical Engineer	U.D.C. of Acton	200*l.* per annum	July 25
*Assistant	C. B. of Derby	120*l.* per annum	July 28
*Assistant Town Treasurer	Durban (Natal) Corporation	600*l.*	Aug. 3
*Clerk of Works	Executive Committee Heene Church	Not Stated	No date
*Brickwork Instructor	Watford Public Library	12s. 6d. per Lesson	do.

Those marked with an asterisk (*) are advertised in this Number. ***Competitions,*** iv. ***Contracts,*** iv. vi. viii. x. ***Public Appointments,*** xvii. xix.

TENDERS.—*Continued from page* 107.

LONDON.—For the erection of the superstructure of the first portion of the Greenwich generating station, the erection of the pump-house, etc., for the London County Council:—

Messrs. H. Lovatt, Ltd., at a reduction of ¼ per cent. on the schedule rates, under their existing contract with the Council.

LONDON.—For alterations and additions to Ratcliffe Baths, for the Stepney Borough Council:—

Parrott & Isom	£1,559 0	Calnan & Son	£1,115 0
Harris & Wardrop	1,400 0	W. G. Brown	1,100 0
P. & T. Thorne	1,324 0	E. Jackson	1,082 5
A. Kendall	1,282 0	Watts, Johnson, & Co., Burdett Wharf, Limehouse, E.*	987 0
Yates & Co.	1,280 0		
F. & F. J. Wood	1,127 0		
W. S. & A. T. Johnson	1,118 10		

LONDON.—For erecting the grand stands, covered terraces, offices, refreshment-rooms, conveniences; also drainage and fencing enclosing site of West Ham United Football Co. grounds, Boleyn Castle, East Ham:—

F. Smith & Co., Carpenter's-road, Stratford, E. * £2,192

LONDON.—For the erection of three houses at Holmesley-street, Honor Oak, S.E., for Mr. John Cockle. Mr. John Jas. Downes, architect, 199, Lewisham High-road, S.E.:—

S. Frampton	£1,180	W. O. Collingwood*	£1,060
J. Lawrence & Son.	1,078		

LONDON.—For the erection of a library at Herne Hill, for the Lambeth Borough Council:—

T. G. Sharpington	£12,450	0	0
Rice & Sons	11,987	0	0
Martin, Wells, & Co., Ltd.	11,800	0	0
Hibberd Bros., Ltd.	11,742	0	0
B. E. Nightingale	11,672	0	0
F. & H. F. Higgs	11,480	0	0
Holliday & Greenwood, Lough-boro' Park Works, Brixton*	11,477	0	0
Edwards & Medway	11,446	0	0

LONDON.—Alterations to No. 41, Kingsland-road, Shoreditch, N.E., for Messrs. Thos. Eaton & Co. Mr. John Jas. Downes, architect, 199, Lewisham High-road, S.E.:—

W. O. Collingwood.. £547 | R. Schooley & Son*... £511

LONDON.—For alterations to the administrative block of the infirmary, and for new heater for the schools, for the Lambeth Board of Guardians:—

		Time for completion.
B. E. Nightingale	£15,089	13 months.
Spencer, Santo, & Co., Ltd.	15,350	12 do.
H. Bragg & Son	15,237	13 do.
Mattock & Parsons	14,988	To be arranged.
W. H. Lorden & Son	14,875	12 months.
Kirk & Randall	14,724	12 do.
W. Lawrence & Son	14,549	12 do.
J. Parsons	14,450	15 do.
H. Kent, 17, Albion-road, Lewisham‡	13,393	7 do.

[Consideration adjourned for two weeks, in order that the architect may make inquiries with a view to the tender of Mr. Kent being accepted.]

LONDON EDUCATION COMMITTEE TENDERS.

For painting or cleaning schools during the summer holidays, 1904:—

City of London, Gravel-lane (Cleaning Interior).

G. Barker	£223	10	
Vigor & Co.	215	0	
H. Runham Brown	208	0	
Barrett & Power	200	0	
J. Haydon & Sons	194	12	
Turnbull & Son	190	0	
J. Appleby & Sons	183	0	
W. Hornett	179	0	
John Greenwood, Ltd., 10, Arthur-street West, E.C.*	168	0	

Strand, "Pulteney" (Painting Interior).

G. Foxley	£321	0	
Thompson & Beveridge	313	0	
J. R. Sims	307	14	
T. Cruwys	280	0	
W. Chappell	£270	0	
Lathey Bros., St. George's Works, New-road, Battersea, S.W.*	267	0	

South Kensington, Allen-street (Painting Interior).

W. R. & A. Hide	£243	10	
J. & M. Patrick	232	0	
Thompson & Beveridge	231	0	
G. Foxley, 27, King-street, Regent-street, W.*	207	0	

Fulham, St. Dunstan's-road (Cleaning Interior of Main School and Painting Interior and Exterior of Special School).

W. Hammond	£674	Lathey Bros.	£375
General Builders, Ltd.	435	J. & M. Patrick	364
Holloway Bros. (London), Ltd.	410	R. S. Ronald, 36, St. Ann's-hill, Wandsworth, S.W.*	350

North Islington, Upper Hornsey-road (Old Portion) (Painting Interior and Exterior).

Patman & Fotheringham, Ltd.	£756	0	0
T. Cruwys	755	10	0
McCormick & Sons	696	0	0
Stevens Bros.	695	10	0
A. Porter	655	0	0
H. Bouneau	618	0	0
C. Dearing & Son, Clarence Works, Halliford-street, Islington, N.*	578	8	0
Marchant & Hirst	551	0	0

South Hackney, Daubeney-road (Cleaning Interior).

Barrett & Power	£345	F. Bull	£279
W. Silk & Son	315	R. Woollaston & Co., 22, Lacey-street, Bow, E.*	208
G. Barker	314		
H. Runham Brown	307		
H. Bouneau	290		

Dulwich, Lyndhurst-grove (Painting Interior).

Leonard & Mason	£400	J. Appleby & Sons	£271
T. Freeman	395	Holliday & Greenwood, Ltd., Lough-borough Park, Brixton, S.W.*	256
H. Line	330		
W. Read	328		
Maxwell Bros., Ltd.	295		

North Lambeth, Addington-street (Painting Interior and Exterior).

J. Appleby & Sons	£591	0	
Holliday & Greenwood, Ltd.	555	0	
Martin, Wells, & Co., Ltd.	480	0	
Rice & Son	456	0	
W. Sayer & Son	444	0	
H. J. Williams	£432	14	
Lathey Bros.	429	0	
J. R. Sims, 58 & 60, Horseferry-road, Westminster, S.W.*	421	0	

North Paddington, Amberley-road (Painting Interior and Exterior).

Macey & Sons, Ltd.	£498	0	
S. Polden	439	10	
W. Hornett	409	12	
F. Chidley & Co.	400	0	
F. T. Chinchen & Co.	397	0	
W. Chappell	£375	0	
Bristow & Eatwell, 63a, Lancaster-road, W.*	337	0	

LONDON EDUCATION COMMITTEE—*continued* :—

Norwood, Jessop-road (Painting Exterior).

T. Freeman	£225 0	J. F. Ford	£105 0
H. Leney & Son..	188 0	Maxwell Bros., Ltd.....	104 0
H. C. Crooks	130 0	W. J. Mitchell & Son, Dulwich*	89 0
W. V. Goad	121 10		
W. Read.....	107 10		

Wandsworth, "Earlsfield" (Iron Buildings) (Painting Interior and Exterior).

C. Gurling	£155 0	W. Johnson & Co., Ltd., Bellevue-road, Wandsworth, S.W.* ..	£81 0
R. A. Jewell	140 0		
E. P. Bulled & Co.	122 0		
R. S. Ronald....	101 0		
E. B. Tucker	97 15		

North Paddington, Campbell-street (Cleaning Interior of Old Portion and Painting Interior of Enlargement).

Thompson & Beveridge	£303 10 0
Marchant & Hirst	257 0 0
G. Foxley.....	248 11 6
F. Chidley & Co.	228 15 0
F. T. Chinchen & Co., Harrow-road, Kensall-green, N.W.*	228 10 0

North Paddington, Essendine-road (Painting Interior and Exterior).

General Builders, Ltd.	£597 0 0
Holloway Bros. (London), Ltd.	491 0 0
F. T. Chinchen & Co.	369 0 0
W. Chappell.....	355 0 0
F. Chidley & Co.....	288 3 0
A. Balfour & Co.	271 14 0
Bristow & Eatwell, 63A, Lancaster-road, W.*	257 0 0

Bermondsey, "Paragon" (Painting Interior and Exterior).

W. King & Son..	£673 0	J. R. Sims	£468 0
J. Appleby & Sons	534 0	E. Proctor & Son	448 0
H. J. Williams ..	498 0	E. Triggs, 92, The Chase, Clapham, S.W.*	399 0
W. Hayter & Son	479 10		
W. Sayer & Son	471 0		

Rotherhithe, Rotherhithe New-road (Painting Interior).

H. Line.....	£405 0 0
W. J. Howie	393 0 0
W. Banks.....	390 0 0
E. Proctor & Son	388 0 0
W. Sayer & Son.....	364 10 0
E. Triggs	364 0 0
Holliday & Greenwood, Ltd., Loughborough-park, Brixton, S.W.*	335 0 0

N. Camberwell, Credon-road (Drainage).

A. Porter*.....	£1,393

MANSFIELD.—For low-pressure hot-water heating apparatus in the Town Hall-buildings, for the Corporation. Mr. R. Frank Vallance, Borough Surveyor, White Hart-chambers, Mansfield :—

Meadow Foundry Co., Mansfield* £200

MIDDLE RASEN.—For additions to Elementary School at Middle Rasen, near Market Rasen, for the Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln. Quantities by architects :—

R. Ranyard ..	£190 2 6	Scupham & Sons	£158 0 0
F. M. Thompson	175 0 0	T. Sutton, Market Rasen*..	152 16 1
G. Coles	164 0 0		

MOUNTAIN ASH.—For erection of caretaker's house, Workmen's Institute. Mr. T. W. Miller, architect, Oxford-street, Mountain Ash :—

Jones Bros.	£405	F. Mills, Mountain Ash*	£409

NANTWICH.—For erecting new schools in Welsh-row, for the Trustees of the Primitive Methodist Chapel. Mr. C. E. Davenport, engineer and architect, Nantwich :—

J. Read	£1,780	Proctor, Major, & Mason	£1,468
F. Mathews	1,771	S. Manley	1,455
G. H. Marshall	1,736	J. F. Hayward, Nantwich*.....	1,450
J. Harding	1,591		
Cox & Naughn	1,587		

PORTLAND.—For alterations and additions at the Grove Inn, for Messrs. J. Groves & Sons, Ltd. Mr. S. Jackson, architect and surveyor, Bridge-chambers, Weymouth :—

T. J. Stevens	£1,182 17 6	A. J. Dunford & Co., Weymouth* ..	£910 0 0
Hawkins Bros.	1,048 5 0		
R. Lynham..	997 10 0		

RYE (Sussex).—For the erection of a stage, dressing-rooms, etc., at the Assembly Room of the "Cinque Ports" Hotel, for Messrs. Edwin Finn & Sons, Ltd., Lydd, Kent. Mr. Thurlow Finn, architect, Guildford, Surrey :—

W. J. Adcock....	£762 0	Henry Knock, Ashford, Kent*	£706 10
S. Harvey	752 10		
L. Edwards	750 0		

*Reduced to £597 11 10.

SHERINGHAM.—For residence, Hook's Hill-road, Sheringham. Mr. T. Inglis Goldie, architect and surveyor, Bank-buildings, Bank Plain, Norwich :—

		Alternative price.	
Utting	£1,850 0 0	£83 15 0	£1,933 15 0
Girling & Smith	1,788 0 7	71 4 7	1,859 5 2
Riches	1,769 0 0	84 0 0	1,853 0 0
Blyth..	1,752 2 7	58 5 6	1,810 8 1
Bullen*.....	1,740 0 0	79 0 0	1,819 0 0

SURBITON.—For making a new road between Brighton and Glenbuck roads, for the Urban District Council. Mr. Samuel Mather, Assoc.M.Inst.C.E., Engineer and Surveyor to the Council :—

F. J. Coxhead	£1,270 0 0	O. T. Gibbons	£1,075 0 0
Cunningham, Forbes, & Co.	1,150 0 0	Lawrence & Thacker ..	1,060 0 0
T. Free & Sons	1,144 11 8	Kavanagh & Co., Surbiton* ..	1,022 15 4

[Surveyor's estimate, £1,089 9s. 11d.]

TWICKENHAM.—For paving with creosoted oal blocks portions of the carraceway in Richmond-road, King-street, and London-road, for the Urban District Council. Mr. F. W. Pearce, Surveyor, Town Hall, Twickenham :—

Mowlem & Co., Westminster* .... Schedule prices.

WEST HARTLEPOOL.—For alterations to Wesleyan School, Avenue-road, for the Education Committee. Mr. H. Barnes, architect, Bank Chambers, Scarborough-street, West Hartlepool :—

Mr. E. M. Tweedle, West Hartlepool* .. £1,350

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